Pantheon Report

Generated at 2018-04-17 01:13:15 (UTC).

Data path: Colombia ppp0 (*remote*) →AWS Brazil 2 Ethernet (*local*).

Repeated the test of 16 congestion control schemes 3 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

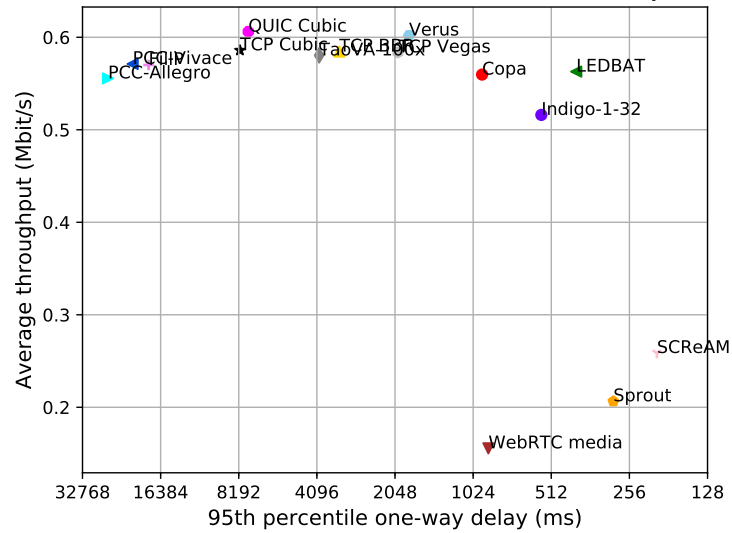Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.
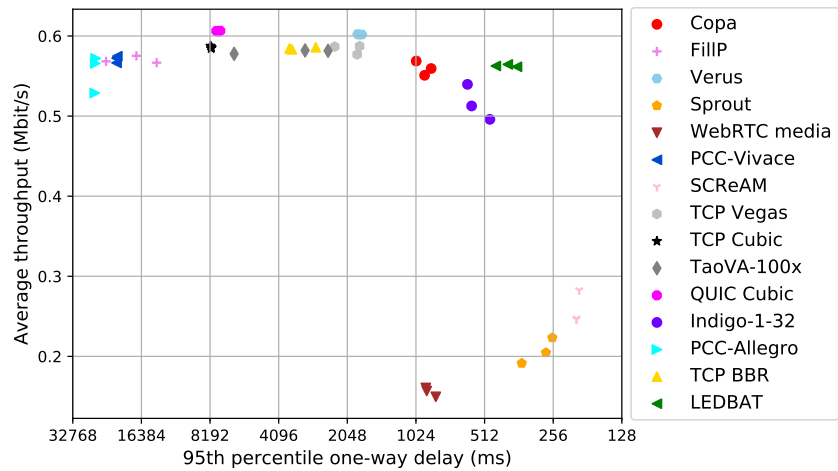
```
Git summary:
branch: master @ b3d6e7098641364fd3a292656a51aa81e316d0b4
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ 11f8c46a2bf1dc797253db7e8ca04076272b2a44
third_party/genericCC @ d223989828276fa83a807da6e0341dc0c7b89aec
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 7a4ba531e75b4a6f66f5c4580192120401784ce3
```

third_party/webrtc @ f271183af822eee5d0031620f4bebf38aedc5581

test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows

3

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.37	0.31	0.05	3327.76	3402.23	3174.31	4.42	7.65	40.39
TCP Cubic	3	0.57	0.03	0.00	8108.57	6324.23	8360.24	30.87	47.38	90.81
LEDBAT	3	0.26	0.33	0.28	353.76	421.17	432.91	0.05	0.83	6.92
PCC-Allegro	3	0.56	0.00	N/A	26120.81	N/A	N/A	98.43	N/A	N/A
QUIC Cubic	3	0.57	0.06	0.00	7472.56	7727.97	7583.26	28.13	32.88	33.33
SCReAM	3	0.08	0.18	0.16	181.56	193.63	235.92	0.83	0.89	1.93
WebRTC media	3	0.05	0.05	0.05	894.45	792.38	918.39	0.64	3.31	0.30
Sprout	3	0.10	0.11	0.11	525.02	221.78	278.17	2.06	2.28	4.99
TaoVA-100x	3	0.36	0.29	0.12	3720.71	4092.72	4124.70	10.34	14.65	61.34
TCP Vegas	3	0.40	0.21	0.20	1765.66	1868.19	2071.98	3.20	6.73	24.27
Verus	3	0.59	0.01	0.01	1807.10	1726.48	1802.75	4.20	6.43	9.70
Copa	3	0.33	0.25	0.19	781.36	930.80	1037.46	5.59	9.06	19.10
FillP	3	0.57	0.00	0.00	18216.99	15923.20	N/A	48.07	72.43	N/A
Indigo-1-32	3	0.26	0.25	0.29	536.26	559.72	570.89	0.85	2.45	5.70
PCC-Vivace	3	0.57	0.00	N/A	21003.81	N/A	N/A	71.29	N/A	N/A
PCC-Expr	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Run 1: Statistics of TCP BBR

Start at: 2018-04-16 23:15:39
End at: 2018-04-16 23:16:09
Local clock offset: -5.05 ms
Remote clock offset: 7.207 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3670.861 ms
Loss rate: 4.26%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 3621.387 ms
Loss rate: 2.02%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 3709.309 ms
Loss rate: 6.40%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 3665.329 ms
Loss rate: 35.19%
```
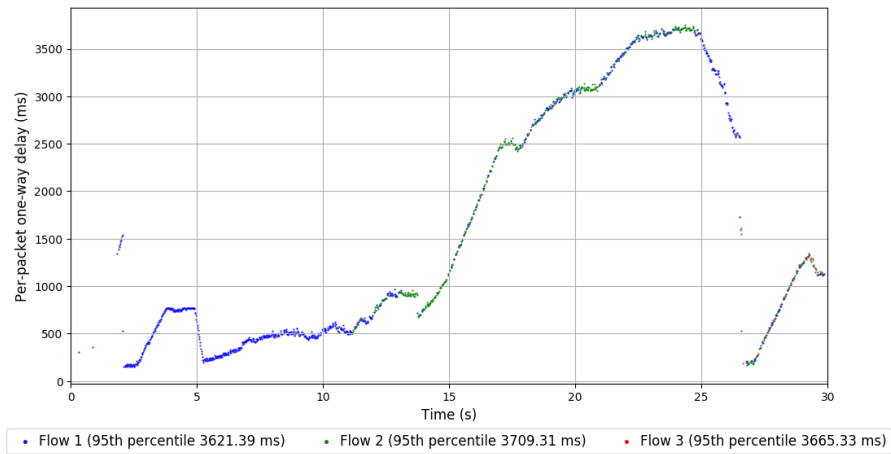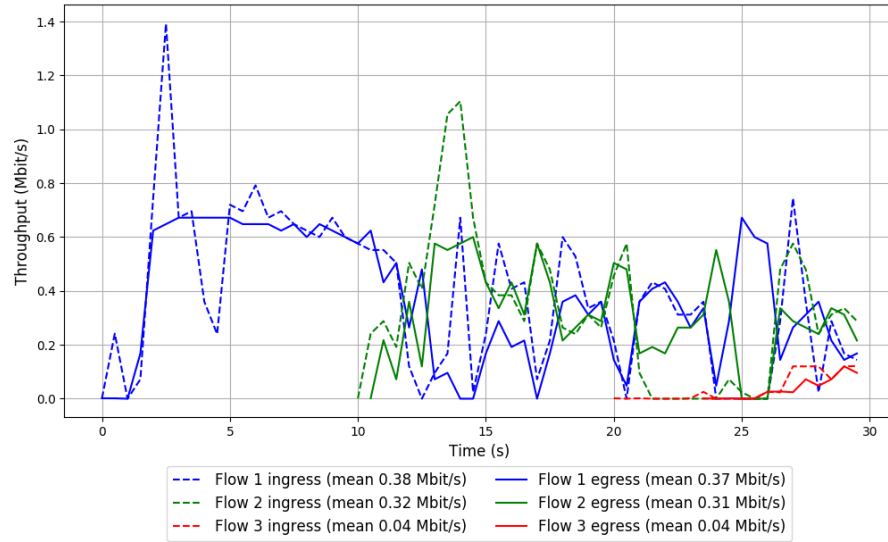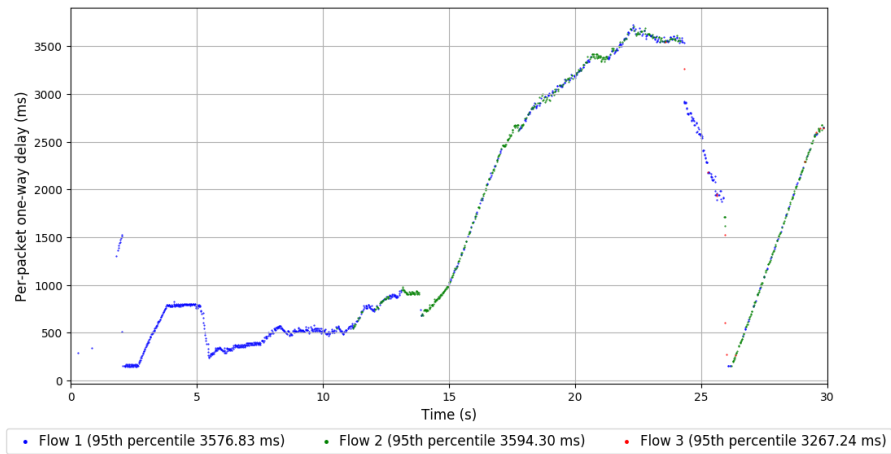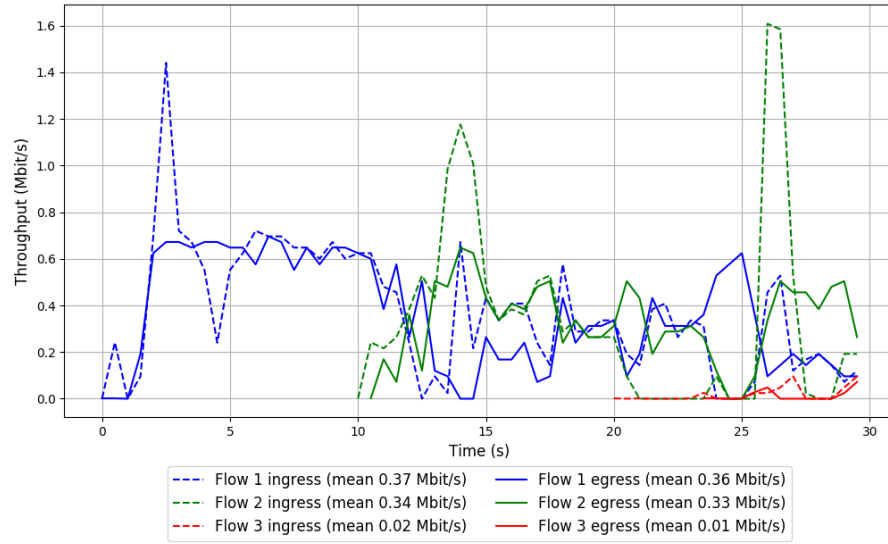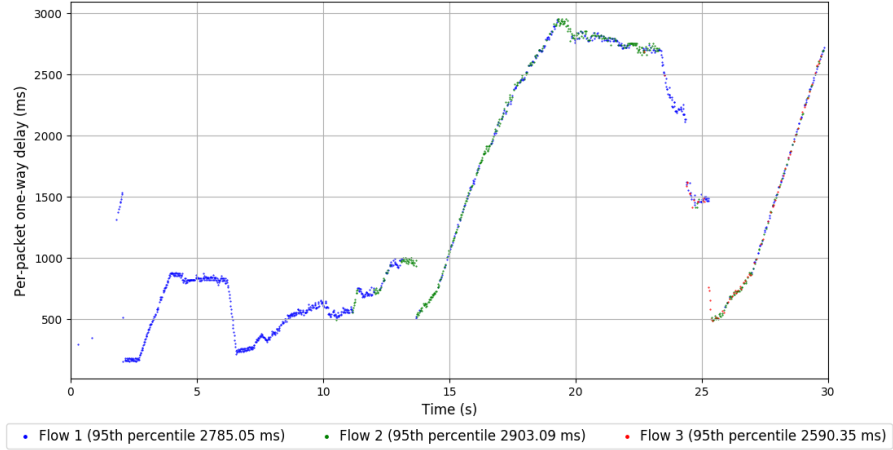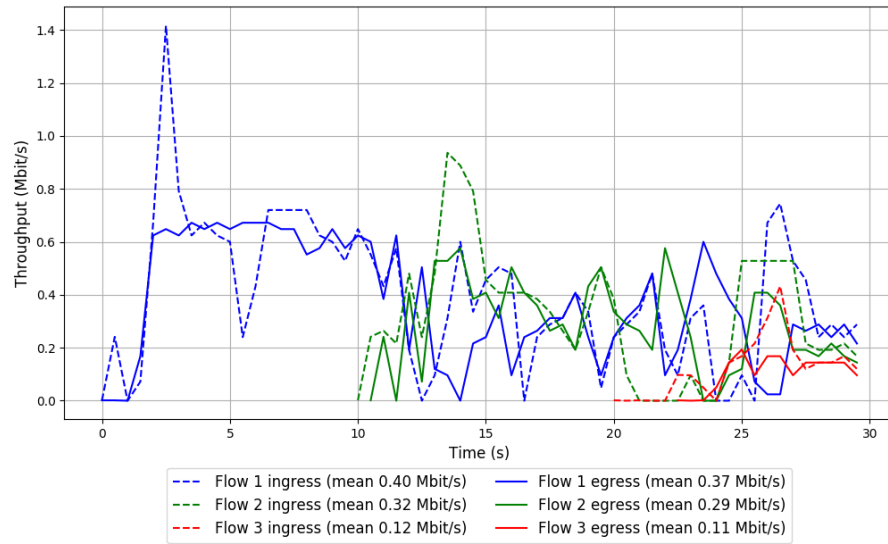
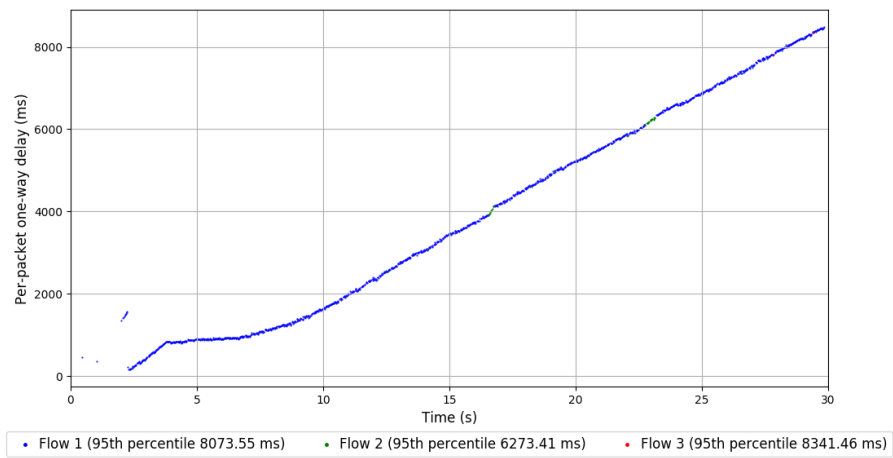Run 1: Report of TCP BBR — Data Link

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```
Run 2: Statistics of TCP BBR

Start at: 2018-04-16 23:37:06
End at: 2018-04-16 23:37:36
Local clock offset: -5.352 ms
Remote clock offset: 12.237 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3584.203 ms
Loss rate: 4.71%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 3576.833 ms
Loss rate: 3.45%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 3594.301 ms
Loss rate: 5.49%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 3267.242 ms
Loss rate: 52.06%
```
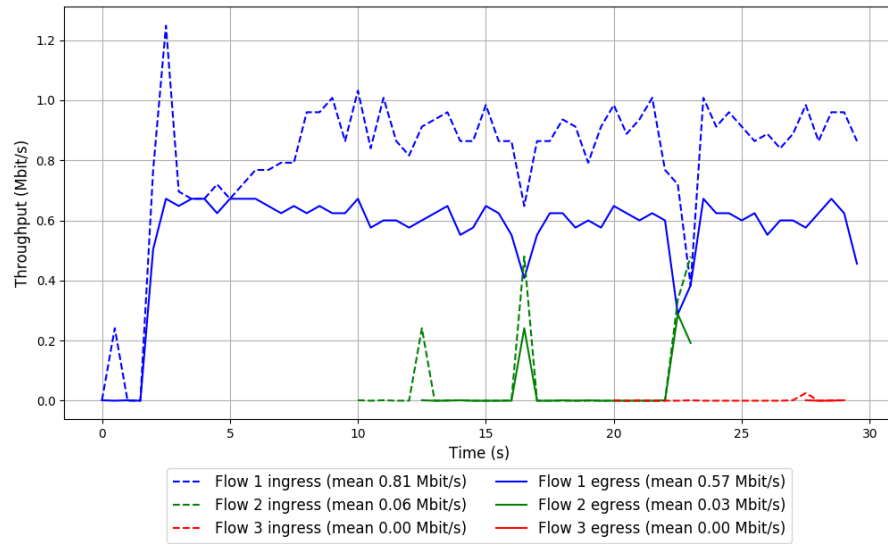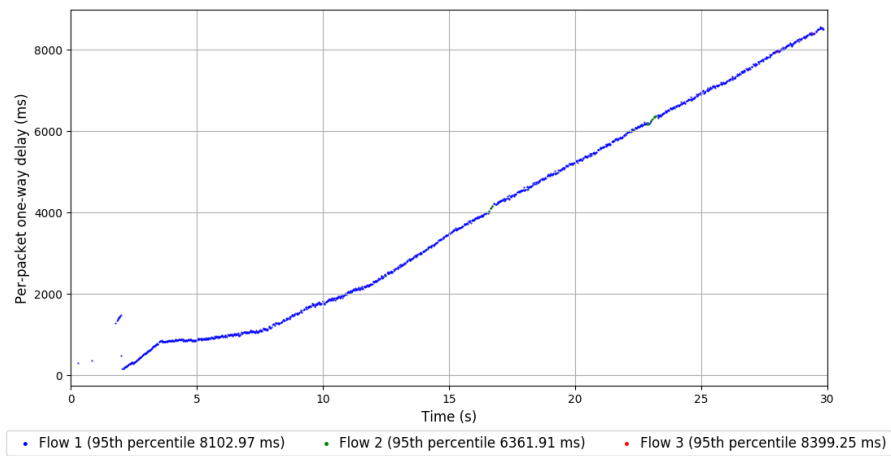
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 0.37 Mbit/s) — Flow 1 egress (mean 0.36 Mbit/s)
Flow 2 ingress (mean 0.34 Mbit/s) — Flow 2 egress (mean 0.33 Mbit/s)
Flow 3 ingress (mean 0.02 Mbit/s) — Flow 3 egress (mean 0.01 Mbit/s)

Flow 1 (95th percentile 3576.83 ms)   Flow 2 (95th percentile 3594.30 ms)   Flow 3 (95th percentile 3267.24 ms)
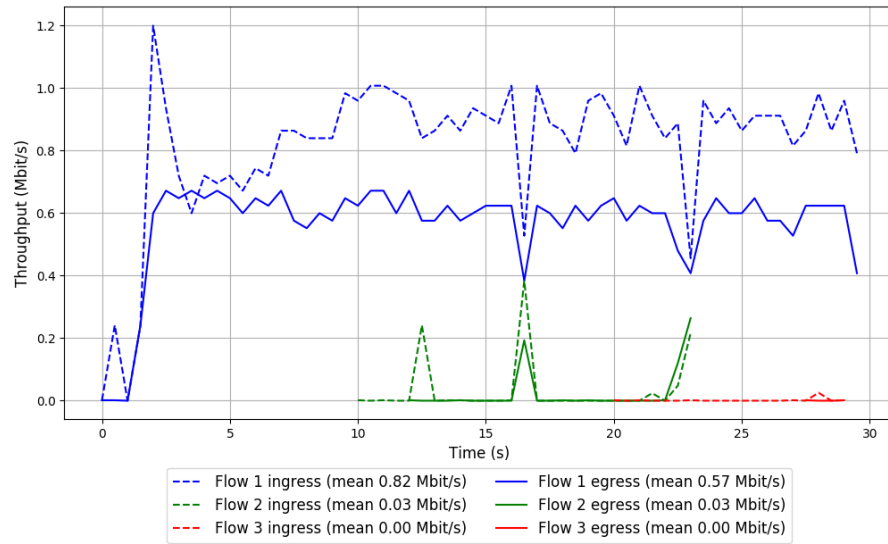
```
Run 3: Statistics of TCP BBR

Start at: 2018-04-16 23:58:33
End at: 2018-04-16 23:59:03
Local clock offset: -5.377 ms
Remote clock offset: 10.862 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 2814.773 ms
Loss rate: 10.49%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2785.048 ms
Loss rate: 7.80%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 2903.090 ms
Loss rate: 11.07%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 2590.347 ms
Loss rate: 33.92%
```

Run 3: Report of TCP BBR — Data Link

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Run 1: Statistics of TCP Cubic

Start at: 2018-04-16 23:16:54
End at: 2018-04-16 23:17:24
Local clock offset: -5.842 ms
Remote clock offset: 12.843 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 8063.528 ms
Loss rate: 31.50%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 8073.553 ms
Loss rate: 30.78%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6273.408 ms
Loss rate: 52.83%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8341.457 ms
Loss rate: 91.06%
```

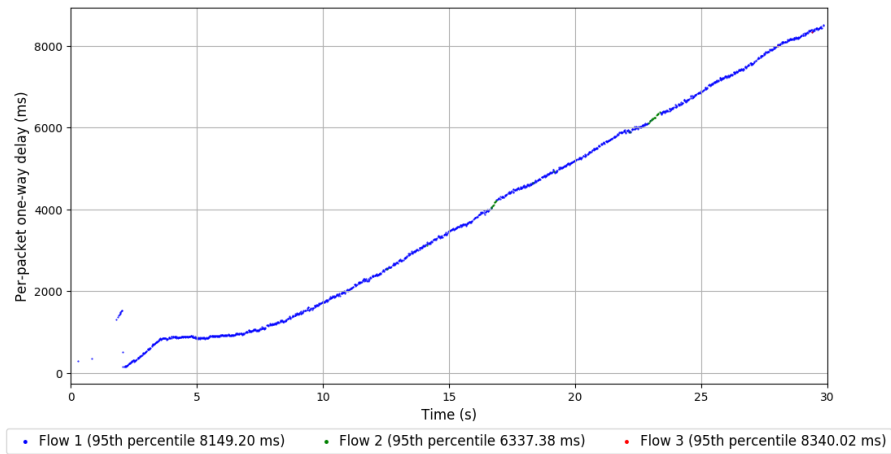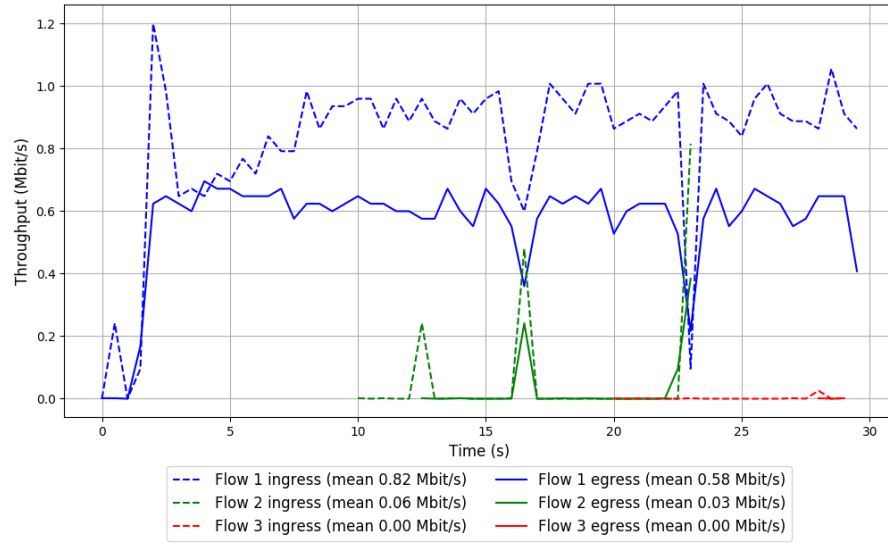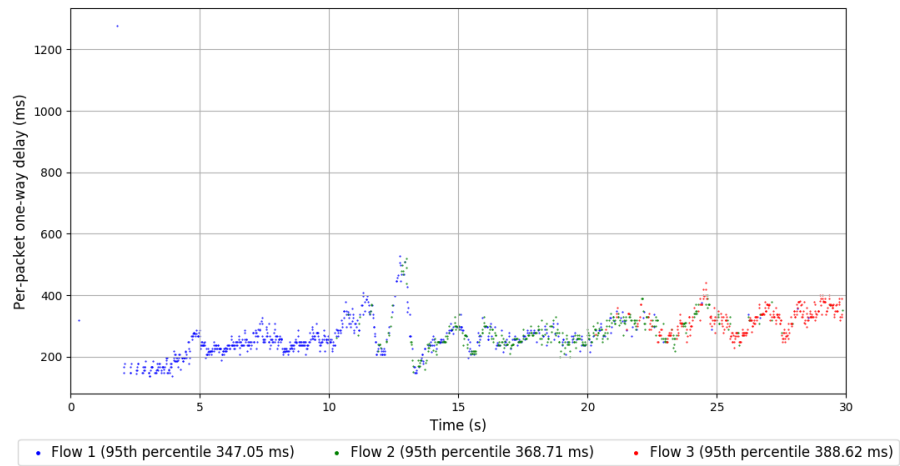Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.81 Mbit/s) --- Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) --- Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 8073.55 ms)   • Flow 2 (95th percentile 6273.41 ms)   • Flow 3 (95th percentile 8341.46 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-04-16 23:38:21
End at: 2018-04-16 23:38:51
Local clock offset: -5.389 ms
Remote clock offset: 12.276 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 8102.969 ms
Loss rate: 31.03%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 8102.969 ms
Loss rate: 30.89%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6361.915 ms
Loss rate: 36.49%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8399.245 ms
Loss rate: 90.68%
```

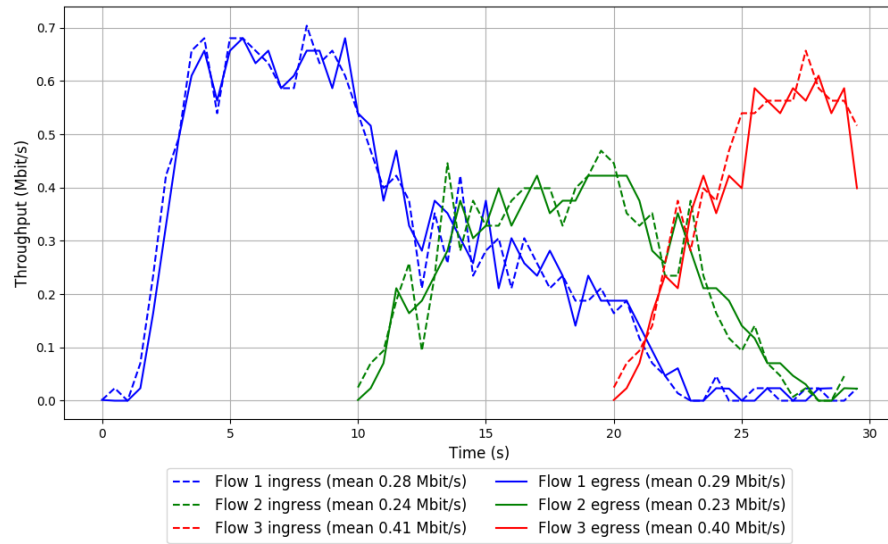Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.82 Mbit/s) — — — — Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.03 Mbit/s) — — — — Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) — — — — Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 8102.97 ms)   • Flow 2 (95th percentile 6361.91 ms)   • Flow 3 (95th percentile 8399.25 ms)

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```
Run 3: Statistics of TCP Cubic

Start at: 2018-04-16 23:59:49
End at: 2018-04-17 00:00:19
Local clock offset: -4.631 ms
Remote clock offset: 10.931 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 8149.160 ms
Loss rate: 31.65%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 8149.199 ms
Loss rate: 30.94%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6337.379 ms
Loss rate: 52.83%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8340.023 ms
Loss rate: 90.68%
```
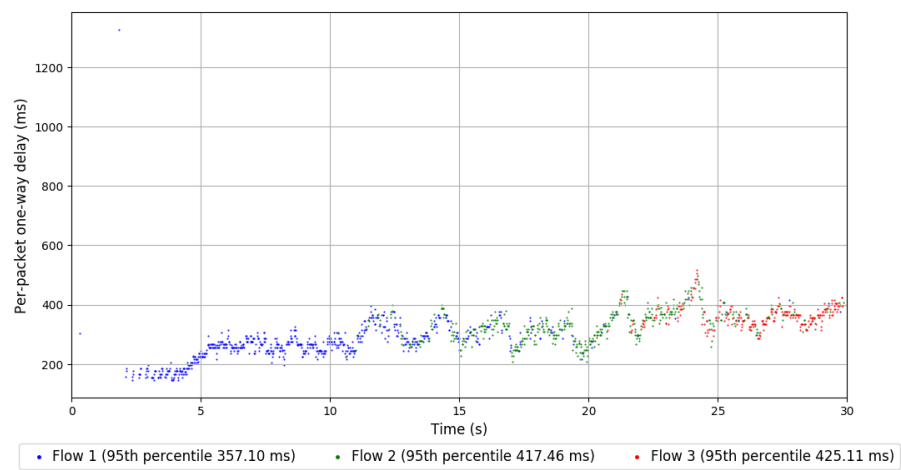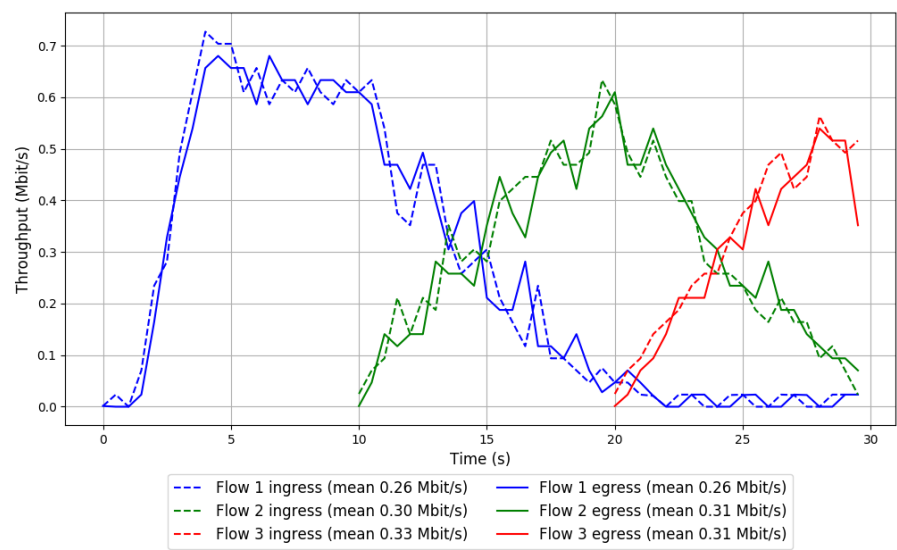
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 0.82 Mbit/s) Flow 1 egress (mean 0.58 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 8149.20 ms)   Flow 2 (95th percentile 6337.38 ms)   Flow 3 (95th percentile 8340.02 ms)

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```
Run 1: Statistics of LEDBAT

Start at: 2018-04-16 23:21:57
End at: 2018-04-16 23:22:27
Local clock offset: -5.193 ms
Remote clock offset: 12.099 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 369.187 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 347.054 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 368.706 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 388.621 ms
Loss rate: 6.34%
```
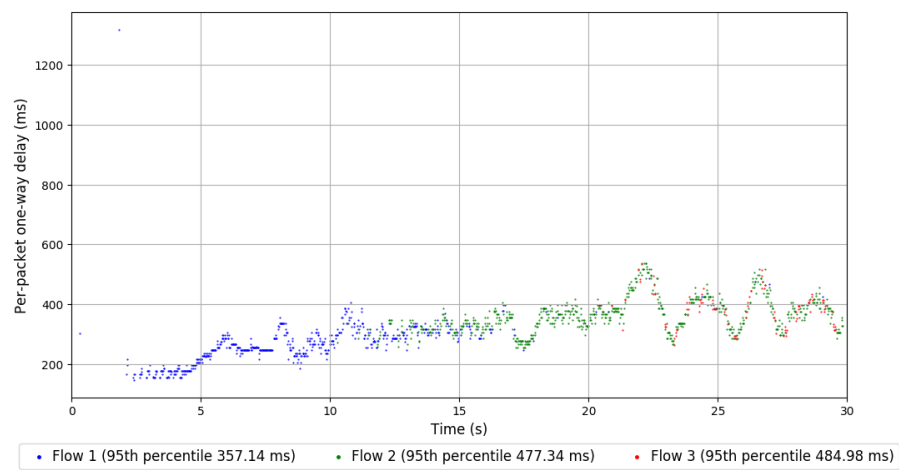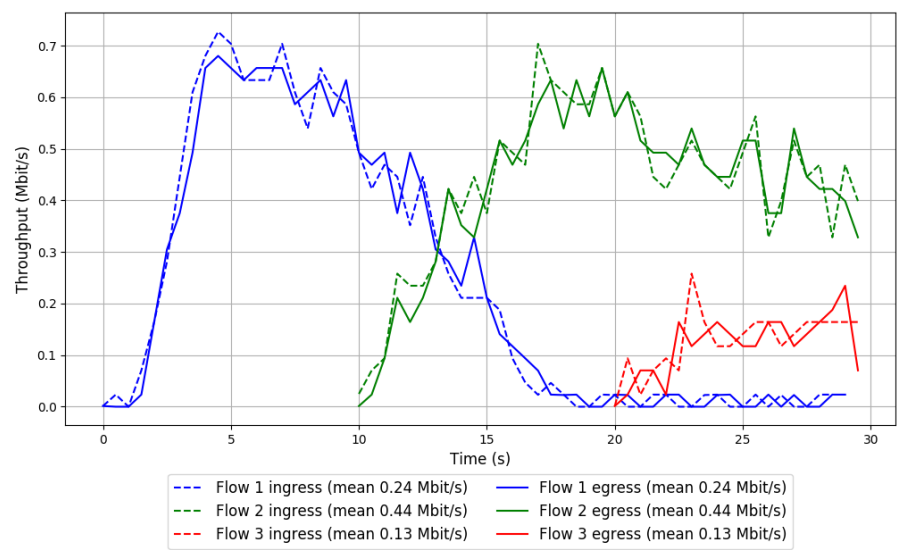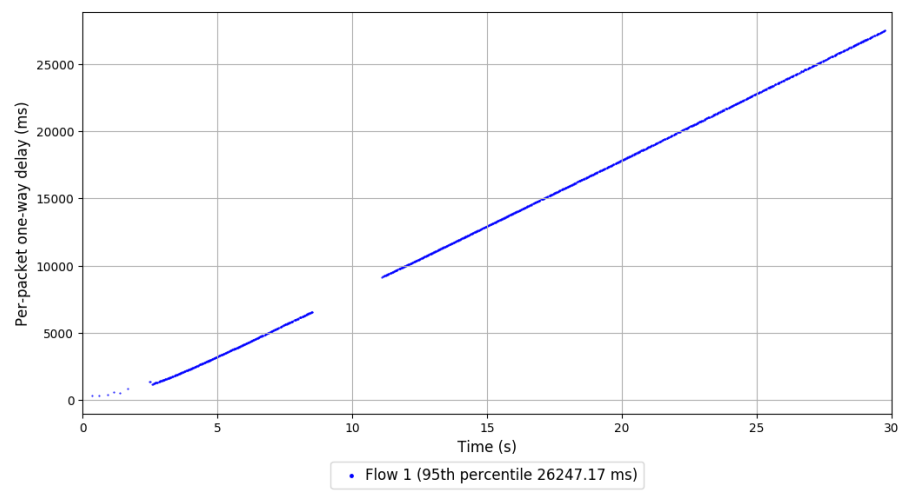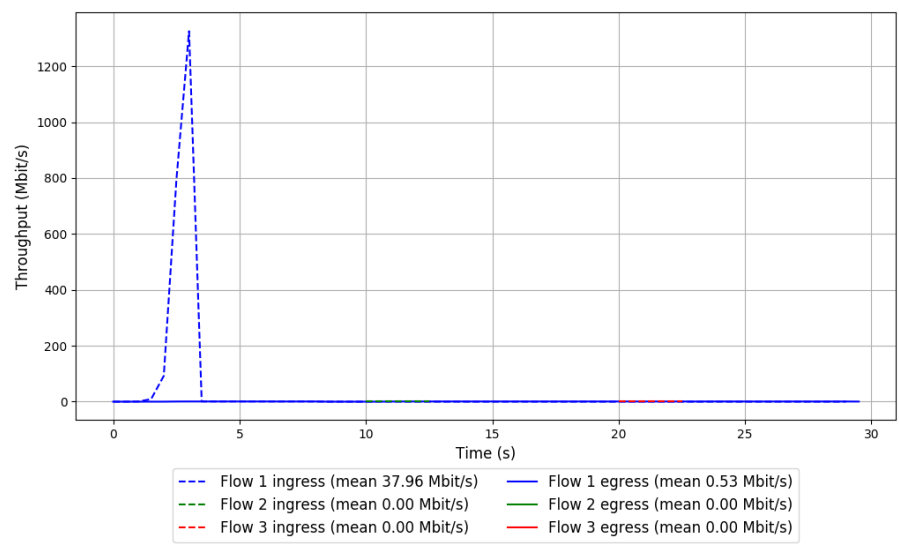
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.28 Mbit/s)   Flow 1 egress (mean 0.29 Mbit/s)
Flow 2 ingress (mean 0.24 Mbit/s)   Flow 2 egress (mean 0.23 Mbit/s)
Flow 3 ingress (mean 0.41 Mbit/s)   Flow 3 egress (mean 0.40 Mbit/s)

Flow 1 (95th percentile 347.05 ms)   Flow 2 (95th percentile 368.71 ms)   Flow 3 (95th percentile 388.62 ms)

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```
Run 2: Statistics of LEDBAT

Start at: 2018-04-16 23:43:23
End at: 2018-04-16 23:43:53
Local clock offset: -5.396 ms
Remote clock offset: 6.304 ms


# Below is generated by plot.py at 2018-04-17 01:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 405.082 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 357.096 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 417.457 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 425.114 ms
Loss rate: 8.00%
```

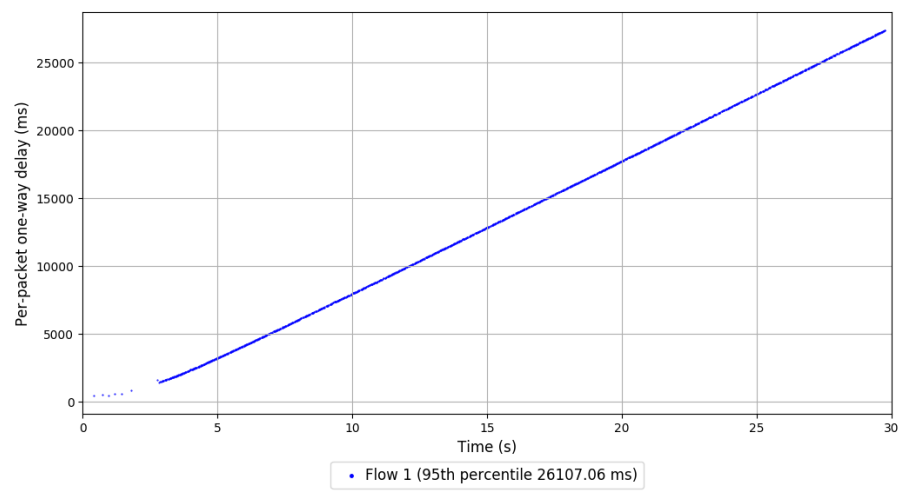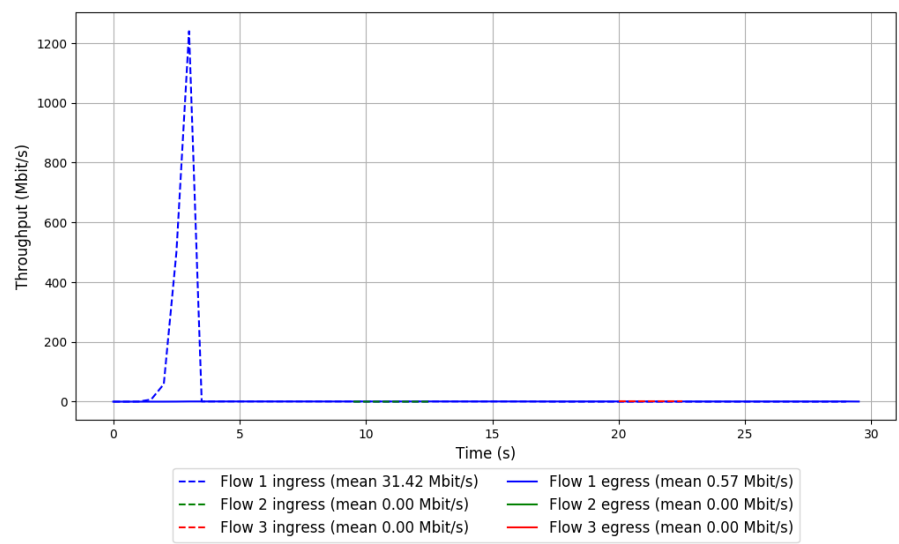Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-04-17 00:04:51
End at: 2018-04-17 00:05:21
Local clock offset: -5.401 ms
Remote clock offset: 5.086 ms

# Below is generated by plot.py at 2018-04-17 01:12:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 457.060 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 357.141 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 477.337 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 484.982 ms
Loss rate: 6.42%
```

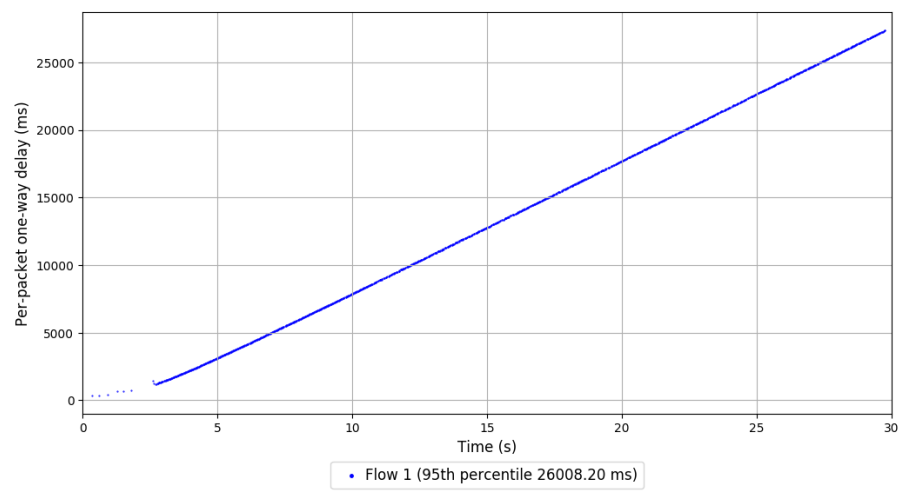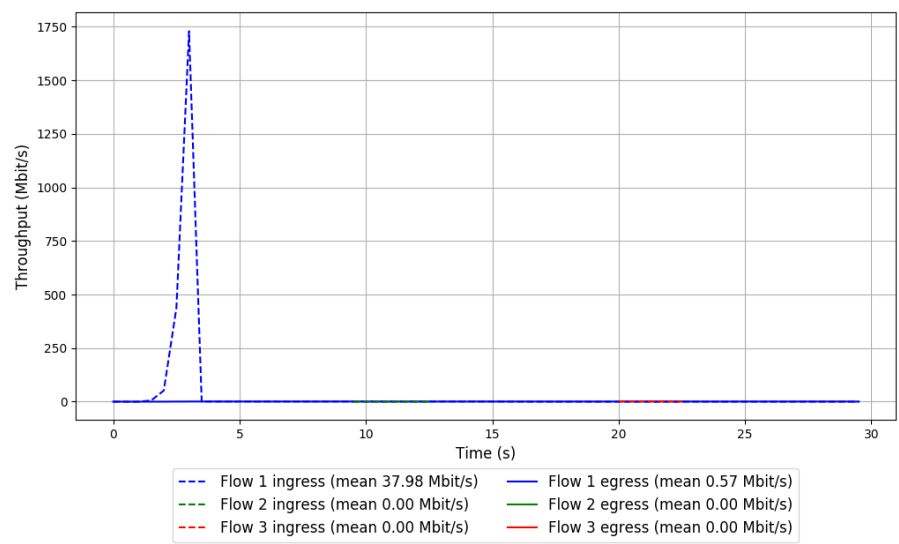# Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.24 Mbit/s) — Flow 1 egress (mean 0.24 Mbit/s)
Flow 2 ingress (mean 0.44 Mbit/s) — Flow 2 egress (mean 0.44 Mbit/s)
Flow 3 ingress (mean 0.13 Mbit/s) — Flow 3 egress (mean 0.13 Mbit/s)

Flow 1 (95th percentile 357.14 ms)   Flow 2 (95th percentile 477.34 ms)   Flow 3 (95th percentile 484.98 ms)

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```
Run 1: Statistics of PCC-Allegro

Start at: 2018-04-16 23:06:44
End at: 2018-04-16 23:07:14
Local clock offset: -4.891 ms
Remote clock offset: 12.746 ms


# Below is generated by plot.py at 2018-04-17 01:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 26247.172 ms
Loss rate: 98.60%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 26247.172 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
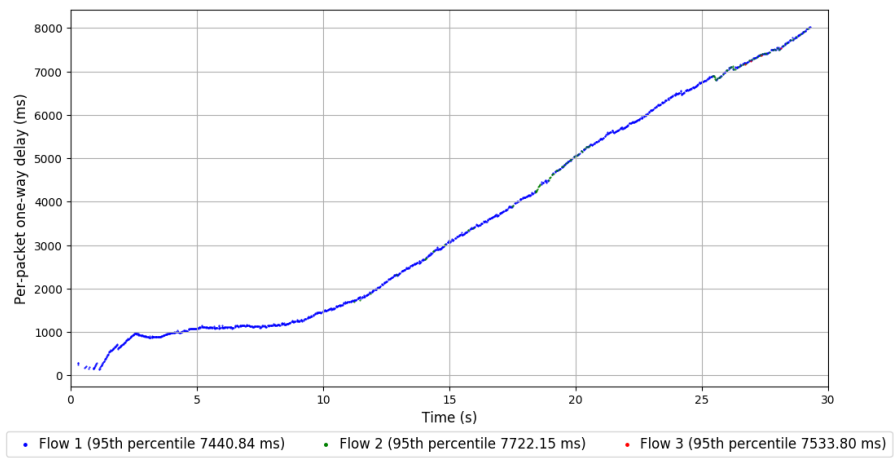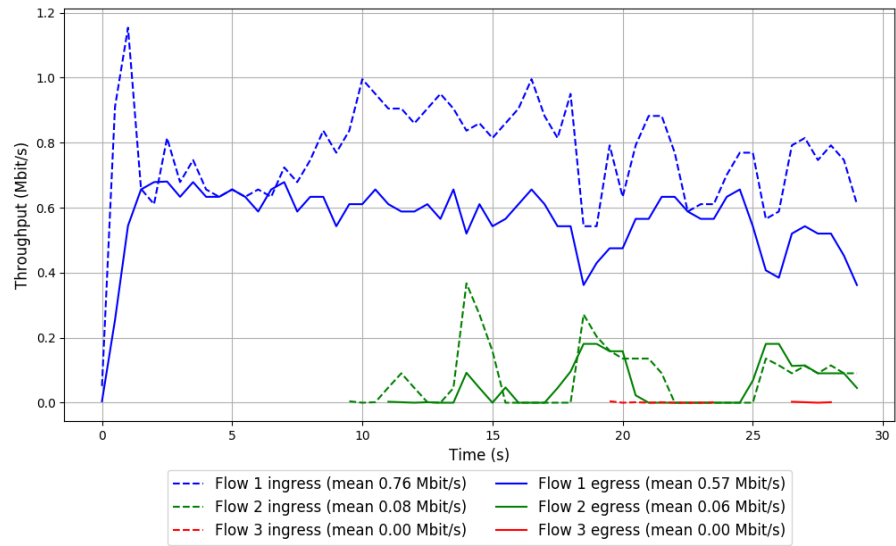
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 37.96 Mbit/s) — Flow 1 egress (mean 0.53 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) — Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) — Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 26247.17 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-04-16 23:28:15
End at: 2018-04-16 23:28:45
Local clock offset: -4.525 ms
Remote clock offset: 7.318 ms


# Below is generated by plot.py at 2018-04-17 01:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26107.060 ms
Loss rate: 98.18%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26107.060 ms
Loss rate: 98.18%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 31.42 Mbit/s) ---- Flow 1 egress (mean 0.57 Mbit/s) ----
Flow 2 ingress (mean 0.00 Mbit/s) ---- Flow 2 egress (mean 0.00 Mbit/s) ----
Flow 3 ingress (mean 0.00 Mbit/s) ---- Flow 3 egress (mean 0.00 Mbit/s) ----

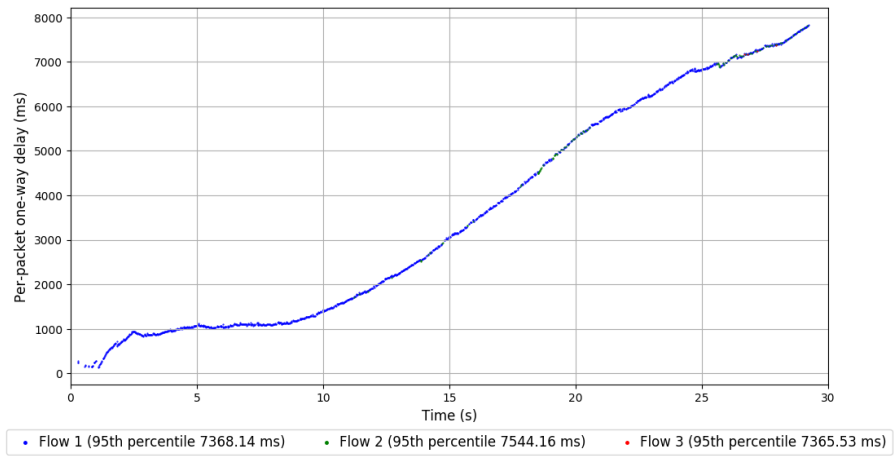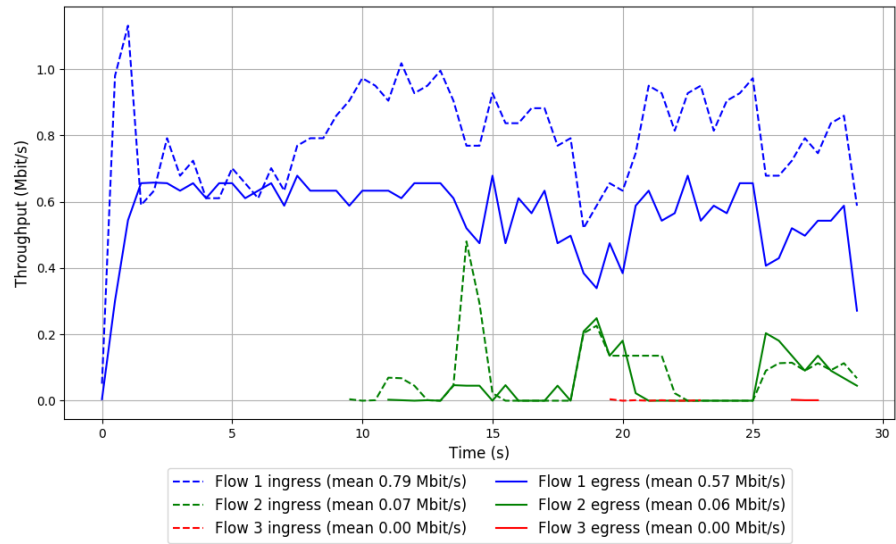• Flow 1 (95th percentile 26107.06 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-04-16 23:49:42
End at: 2018-04-16 23:50:12
Local clock offset: -4.618 ms
Remote clock offset: 11.34 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26008.200 ms
Loss rate: 98.50%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26008.200 ms
Loss rate: 98.50%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 37.98 Mbit/s) — Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) — Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) — Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 26008.20 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-04-16 23:14:23
End at: 2018-04-16 23:14:53
Local clock offset: -5.022 ms
Remote clock offset: 6.381 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 7503.306 ms
Loss rate: 26.73%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7440.843 ms
Loss rate: 26.29%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 7722.153 ms
Loss rate: 33.23%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7533.801 ms
Loss rate: 33.33%
```

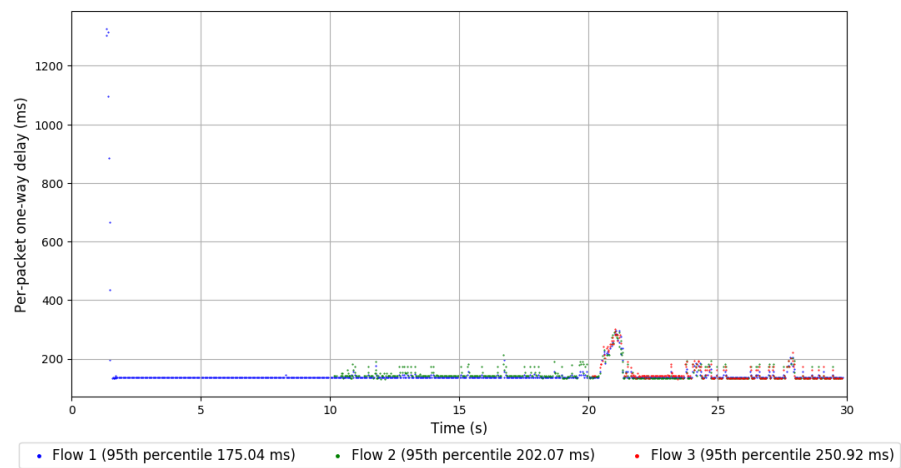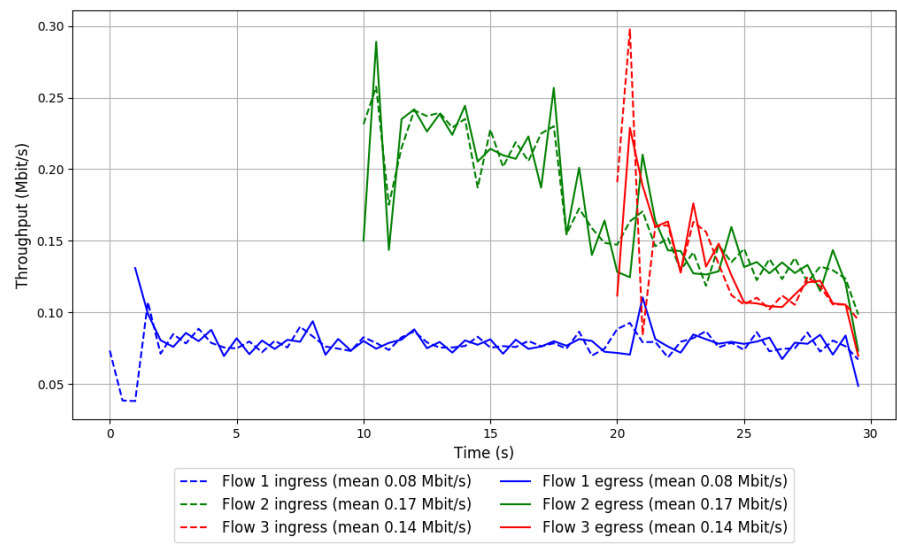Run 1: Report of QUIC Cubic — Data Link
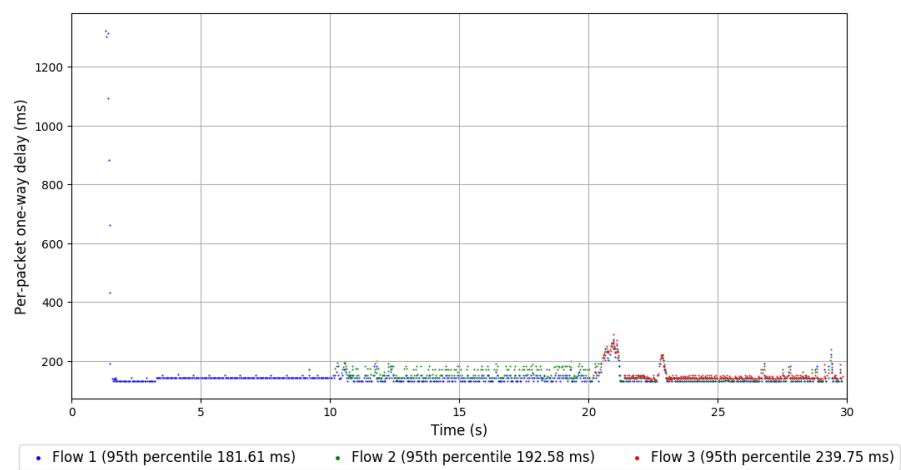
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-04-16 23:35:50
End at: 2018-04-16 23:36:20
Local clock offset: -5.338 ms
Remote clock offset: 11.392 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 7687.911 ms
Loss rate: 29.40%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7608.689 ms
Loss rate: 29.22%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 7917.588 ms
Loss rate: 32.43%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7850.433 ms
Loss rate: 33.33%
```

Run 2: Report of QUIC Cubic — Data Link
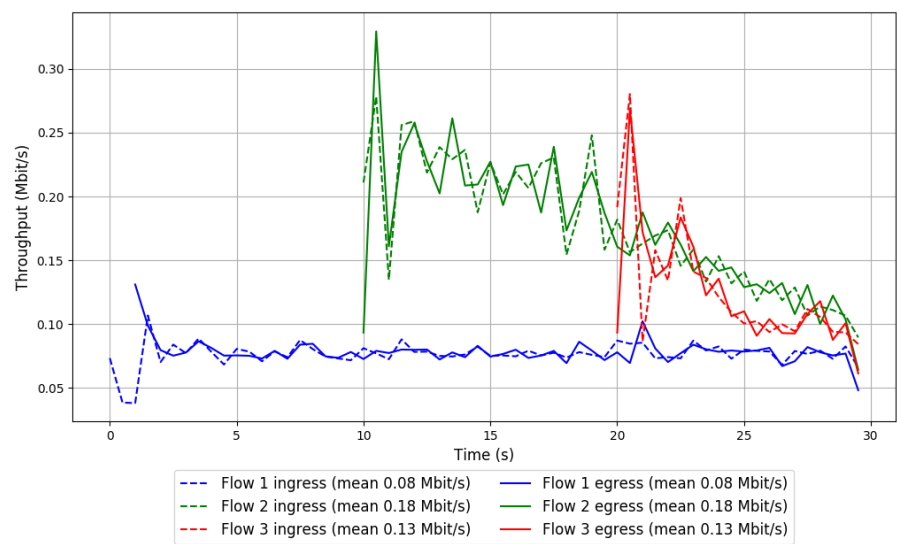

Flow 1 ingress (mean 0.80 Mbit/s) Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.07 Mbit/s) Flow 2 egress (mean 0.05 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 7608.69 ms) • Flow 2 (95th percentile 7917.59 ms) • Flow 3 (95th percentile 7850.43 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-04-16 23:57:17
End at: 2018-04-16 23:57:48
Local clock offset: -5.364 ms
Remote clock offset: 10.197 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 7385.208 ms
Loss rate: 29.11%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7368.143 ms
Loss rate: 28.87%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 7544.156 ms
Loss rate: 32.99%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7365.533 ms
Loss rate: 33.33%
```

Run 3: Report of QUIC Cubic — Data Link

- - - - Flow 1 ingress (mean 0.79 Mbit/s) ——— Flow 1 egress (mean 0.57 Mbit/s)
- - - - Flow 2 ingress (mean 0.07 Mbit/s) ——— Flow 2 egress (mean 0.06 Mbit/s)
- - - - Flow 3 ingress (mean 0.00 Mbit/s) ——— Flow 3 egress (mean 0.00 Mbit/s)

- Flow 1 (95th percentile 7368.14 ms)   • Flow 2 (95th percentile 7544.16 ms)   • Flow 3 (95th percentile 7365.53 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-04-16 23:23:12
End at: 2018-04-16 23:23:42
Local clock offset: -5.195 ms
Remote clock offset: 7.255 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 202.637 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 175.045 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 202.071 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 250.922 ms
Loss rate: 1.91%
```
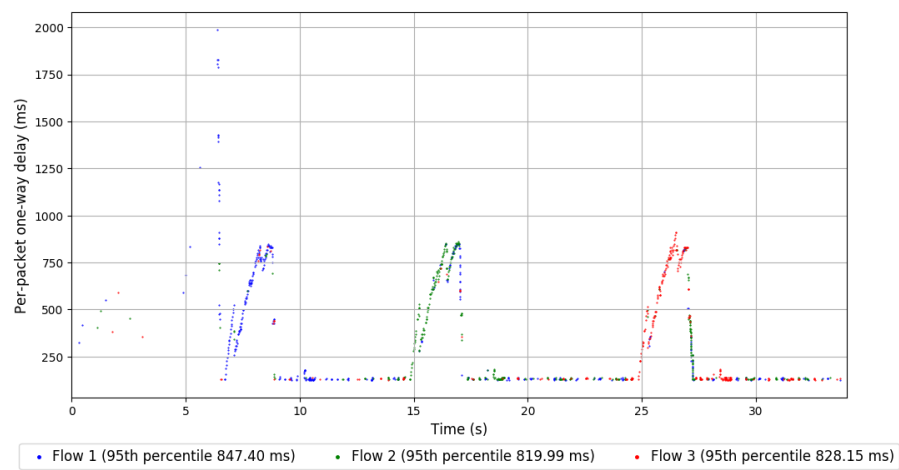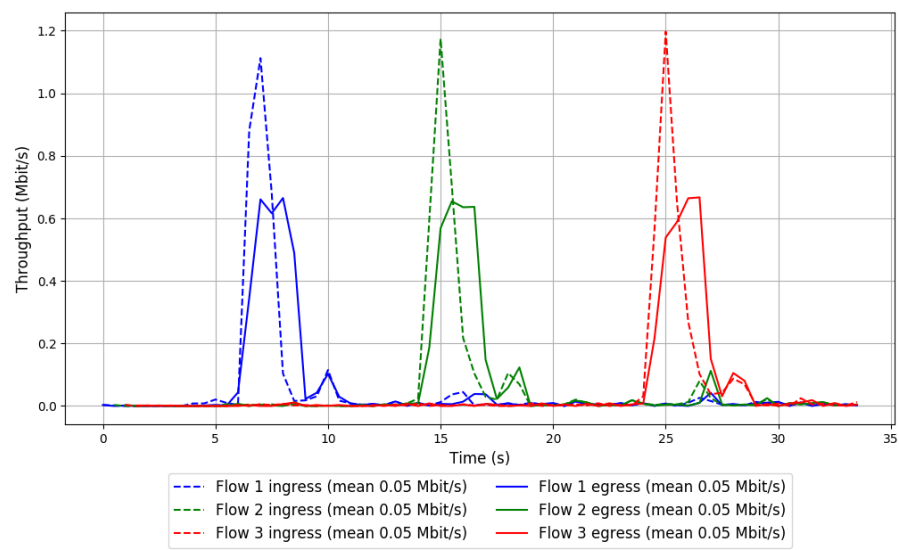
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-04-16 23:44:39
End at: 2018-04-16 23:45:09
Local clock offset: -4.665 ms
Remote clock offset: 7.03 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 202.232 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 181.614 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 192.583 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 239.746 ms
Loss rate: 1.80%
```
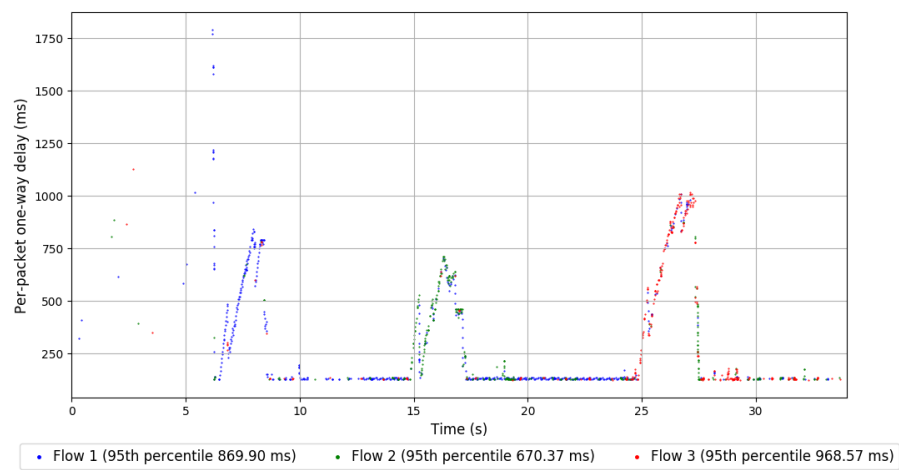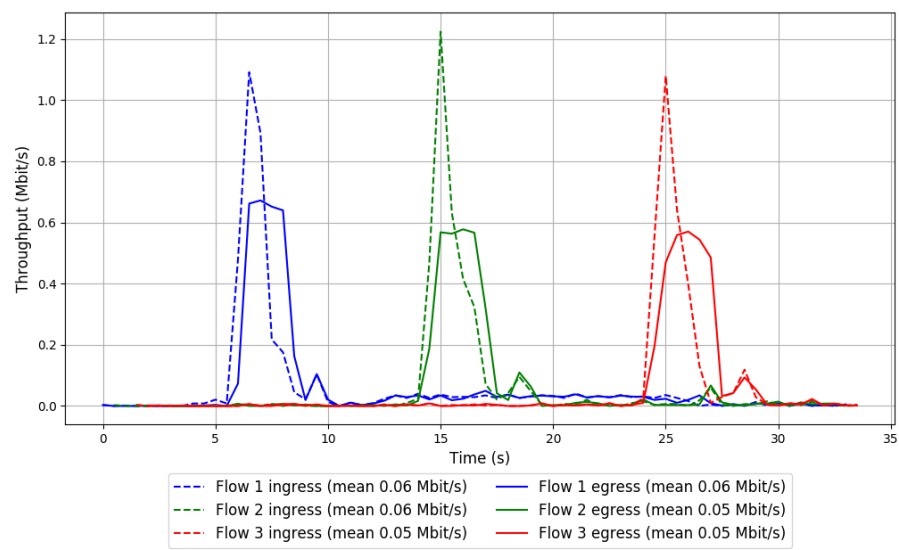
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-04-17 00:06:07
End at: 2018-04-17 00:06:37
Local clock offset: -4.628 ms
Remote clock offset: 5.911 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 196.924 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 188.036 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 186.239 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 217.091 ms
Loss rate: 2.07%
```
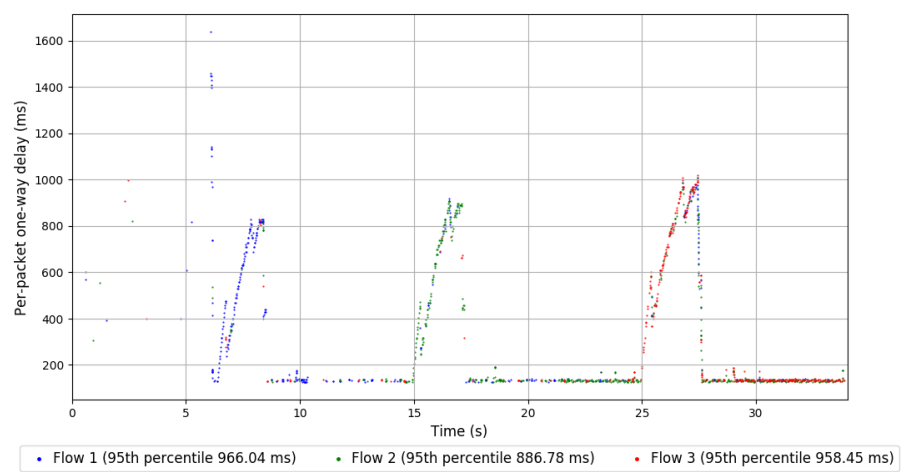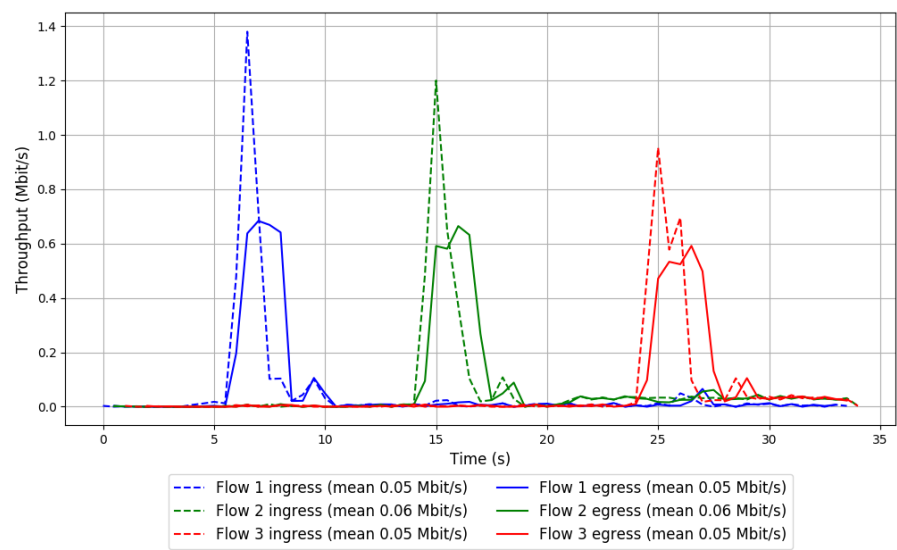
Run 3: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-04-16 23:19:26
End at: 2018-04-16 23:19:56
Local clock offset: -5.19 ms
Remote clock offset: 11.252 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 837.942 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 847.405 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 819.994 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 828.148 ms
Loss rate: 0.30%
```
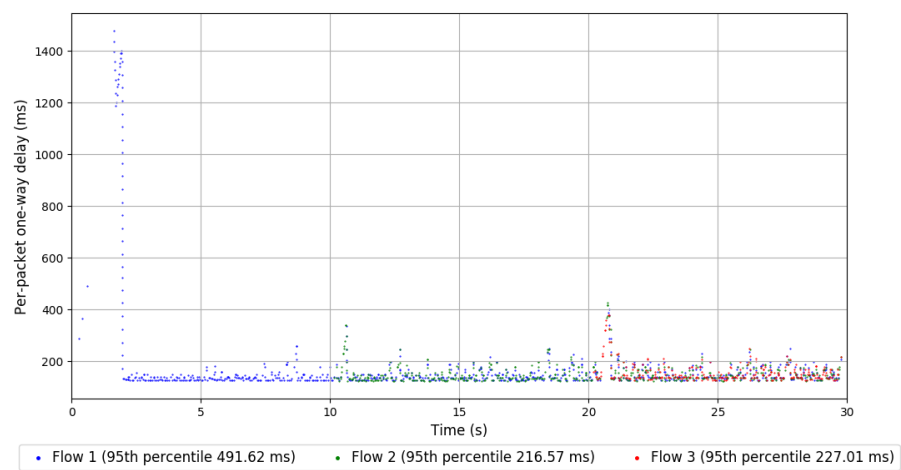
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-04-16 23:40:53
End at: 2018-04-16 23:41:23
Local clock offset: -5.429 ms
Remote clock offset: 12.237 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 918.488 ms
Loss rate: 3.84%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 869.897 ms
Loss rate: 1.83%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 670.369 ms
Loss rate: 9.38%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 968.566 ms
Loss rate: 0.08%
```
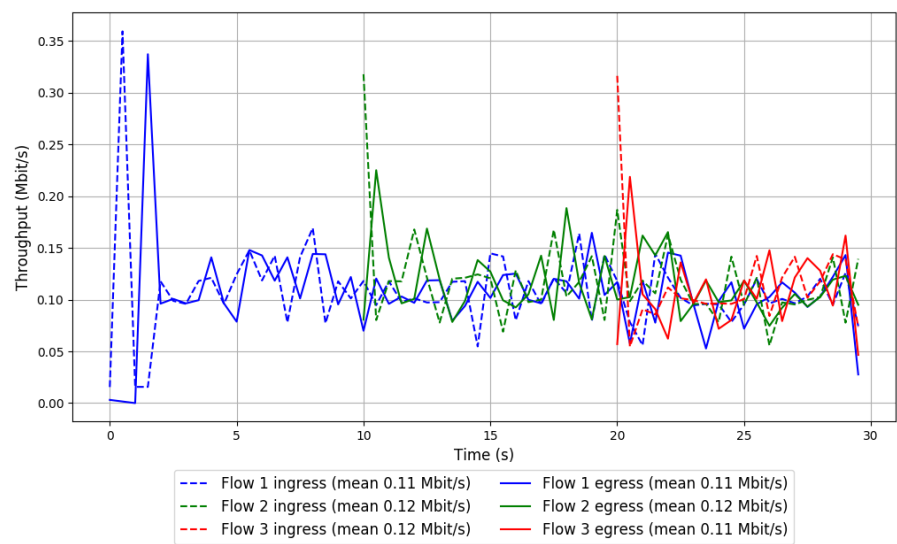
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-04-17 00:02:20
End at: 2018-04-17 00:02:50
Local clock offset: -5.401 ms
Remote clock offset: 9.987 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 927.163 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 966.037 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 886.779 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 958.447 ms
Loss rate: 0.51%
```
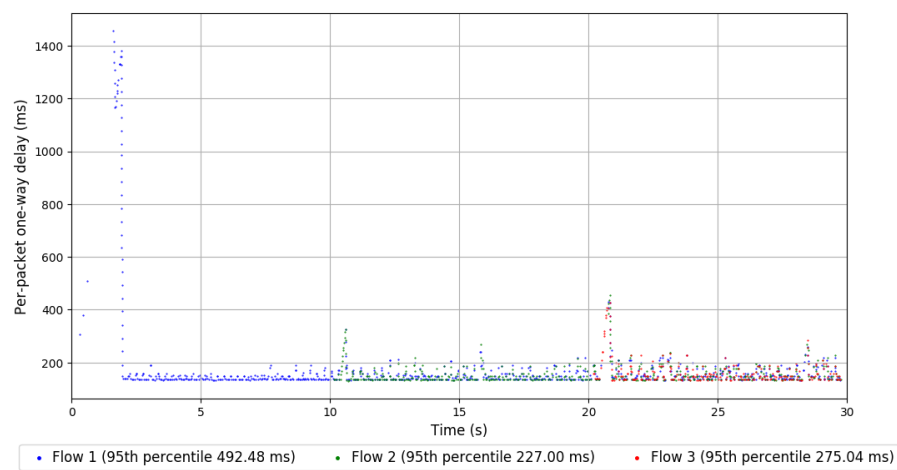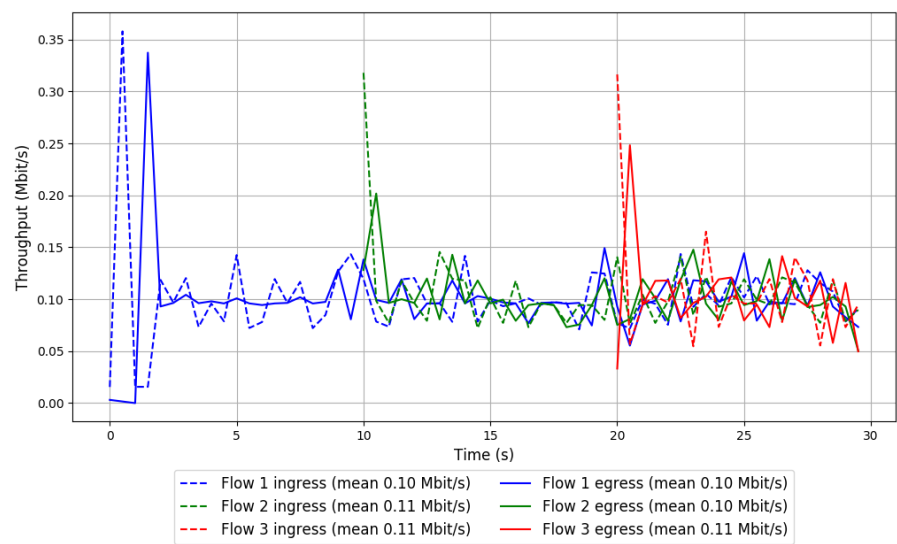
Run 3: Report of WebRTC media — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-04-16 23:08:02
End at: 2018-04-16 23:08:32
Local clock offset: -4.879 ms
Remote clock offset: 12.73 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 258.333 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 491.619 ms
Loss rate: 1.69%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 216.572 ms
Loss rate: 2.42%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 227.012 ms
Loss rate: 5.93%
```
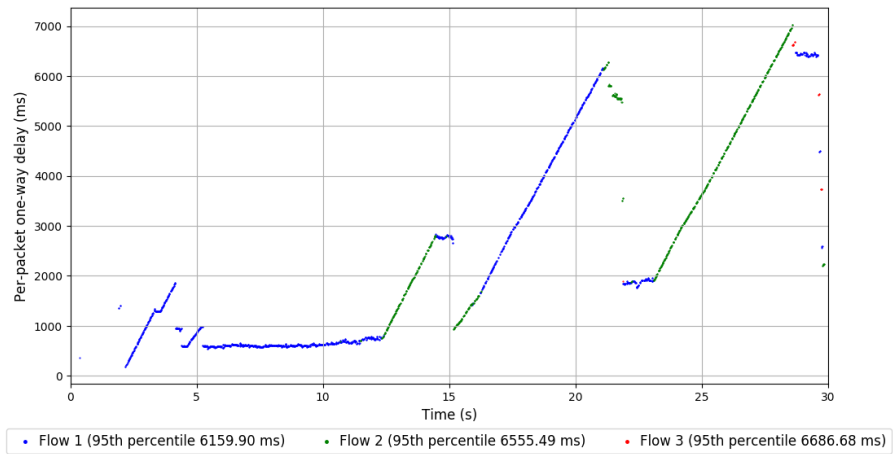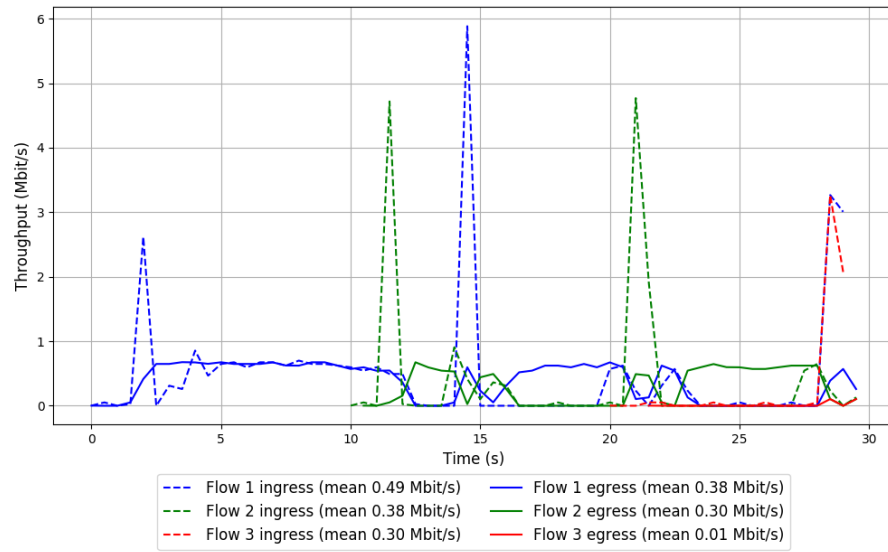
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-04-16 23:29:32
End at: 2018-04-16 23:30:02
Local clock offset: -5.305 ms
Remote clock offset: 12.113 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 351.874 ms
Loss rate: 2.36%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 590.945 ms
Loss rate: 2.34%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 221.776 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 332.444 ms
Loss rate: 3.63%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-04-16 23:50:59
End at: 2018-04-16 23:51:29
Local clock offset: -5.444 ms
Remote clock offset: 5.649 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 275.463 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 492.483 ms
Loss rate: 2.16%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 227.004 ms
Loss rate: 2.66%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 275.044 ms
Loss rate: 5.40%
```
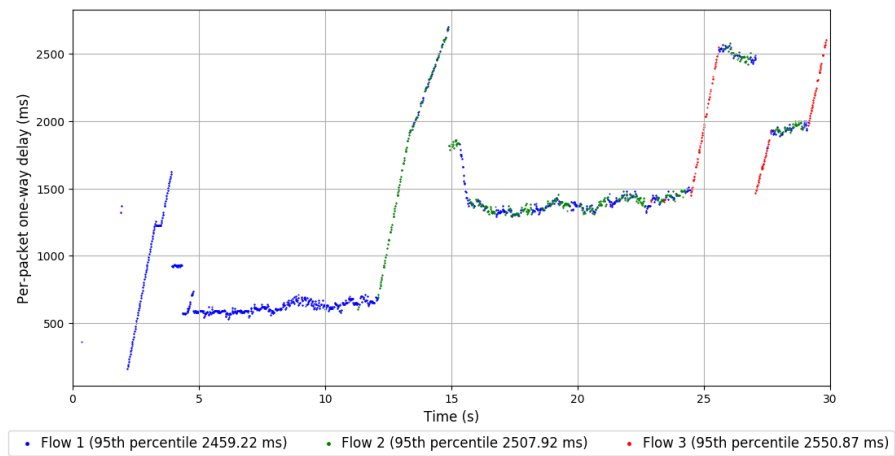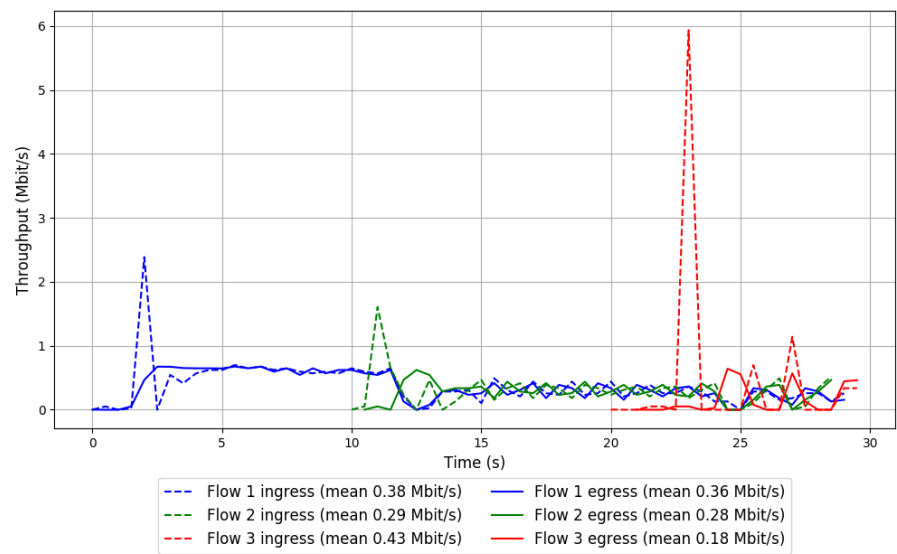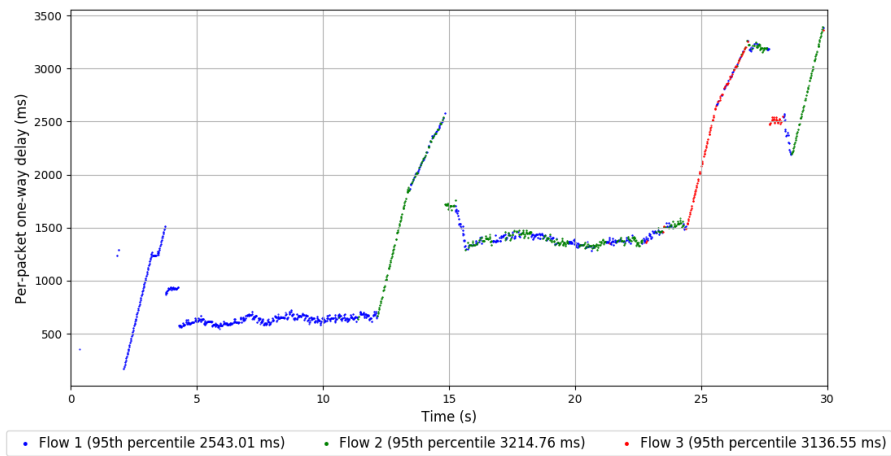
Run 3: Report of Sprout — Data Link

```
Run 1: Statistics of TaoVA-100x

Start at: 2018-04-16 23:13:07
End at: 2018-04-16 23:13:37
Local clock offset: -4.986 ms
Remote clock offset: 11.19 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 6422.047 ms
Loss rate: 31.14%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 6159.904 ms
Loss rate: 22.16%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 6555.488 ms
Loss rate: 24.08%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 6686.678 ms
Loss rate: 96.26%
```
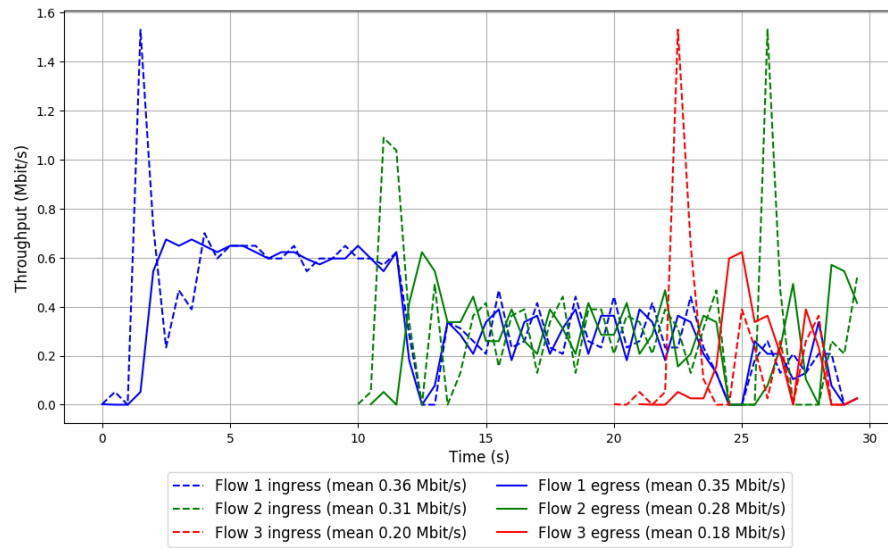
Run 1: Report of TaoVA-100x — Data Link

```
Run 2: Statistics of TaoVA-100x

Start at: 2018-04-16 23:34:34
End at: 2018-04-16 23:35:04
Local clock offset: -5.343 ms
Remote clock offset: 7.431 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 2487.441 ms
Loss rate: 17.76%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 2459.218 ms
Loss rate: 4.36%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 2507.921 ms
Loss rate: 8.12%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 2550.869 ms
Loss rate: 64.74%
```
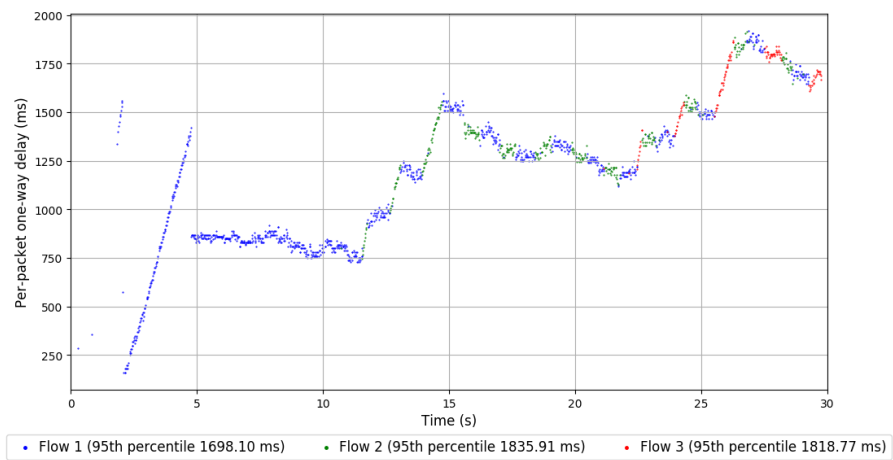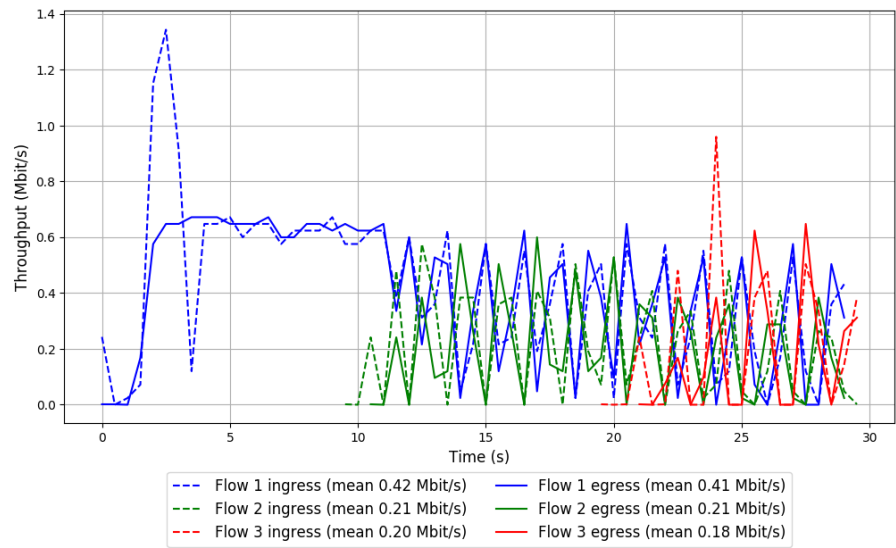
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.38 Mbit/s) --- Flow 1 egress (mean 0.36 Mbit/s)
Flow 2 ingress (mean 0.29 Mbit/s) --- Flow 2 egress (mean 0.28 Mbit/s)
Flow 3 ingress (mean 0.43 Mbit/s) --- Flow 3 egress (mean 0.18 Mbit/s)

Flow 1 (95th percentile 2459.22 ms) • Flow 2 (95th percentile 2507.92 ms) • Flow 3 (95th percentile 2550.87 ms)

```
Run 3: Statistics of TaoVA-100x

Start at: 2018-04-16 23:56:01
End at: 2018-04-16 23:56:31
Local clock offset: -5.377 ms
Remote clock offset: 10.291 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3136.554 ms
Loss rate: 8.81%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 2543.013 ms
Loss rate: 4.49%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 3214.758 ms
Loss rate: 11.76%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 3136.554 ms
Loss rate: 23.01%
```
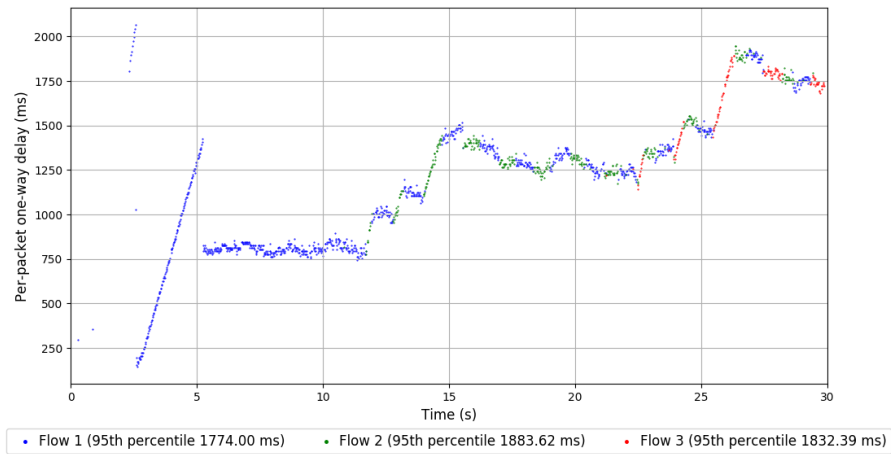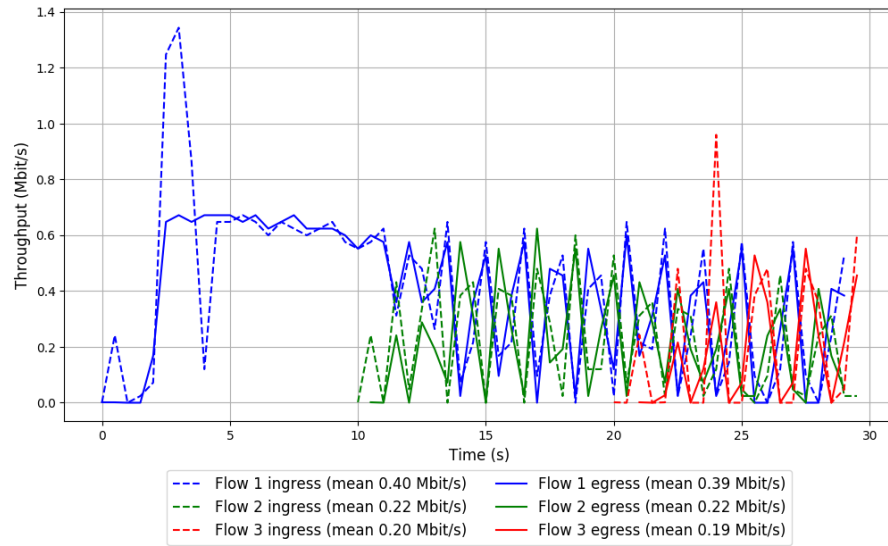
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.36 Mbit/s)   Flow 1 egress (mean 0.35 Mbit/s)
Flow 2 ingress (mean 0.31 Mbit/s)   Flow 2 egress (mean 0.28 Mbit/s)
Flow 3 ingress (mean 0.20 Mbit/s)   Flow 3 egress (mean 0.18 Mbit/s)

Flow 1 (95th percentile 2543.01 ms)   Flow 2 (95th percentile 3214.76 ms)   Flow 3 (95th percentile 3136.55 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-04-16 23:04:14
End at: 2018-04-16 23:04:44
Local clock offset: -4.074 ms
Remote clock offset: 6.291 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1808.393 ms
Loss rate: 5.81%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 1698.103 ms
Loss rate: 3.23%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1835.909 ms
Loss rate: 6.68%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 1818.774 ms
Loss rate: 20.21%
```
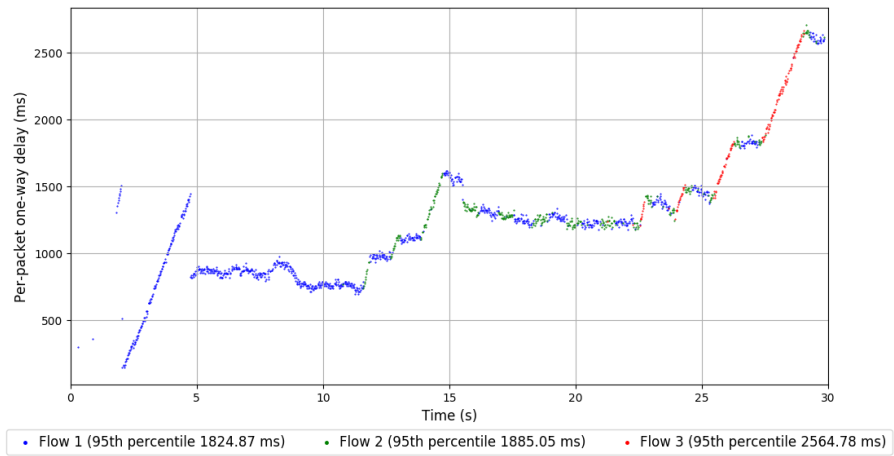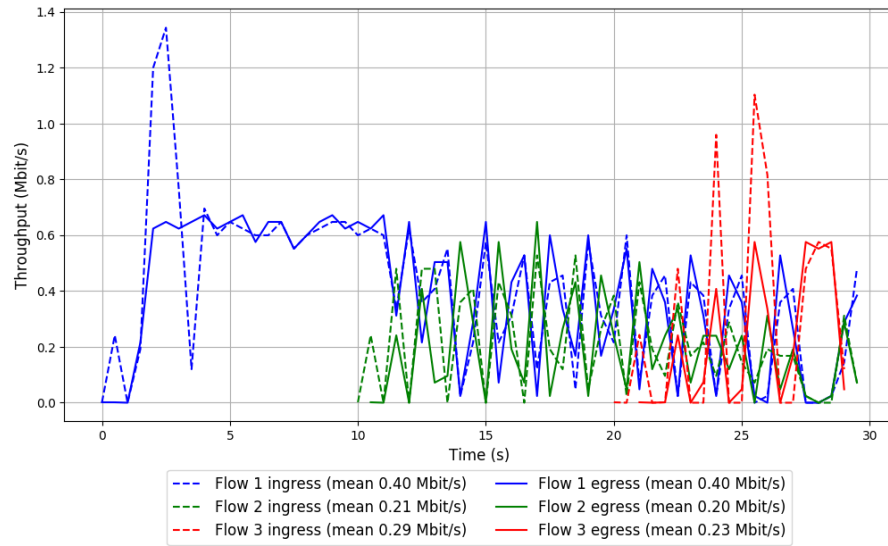
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-04-16 23:25:44
End at: 2018-04-16 23:26:14
Local clock offset: -6.079 ms
Remote clock offset: 6.404 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1854.068 ms
Loss rate: 6.02%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1774.002 ms
Loss rate: 3.27%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1883.621 ms
Loss rate: 6.85%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 1832.393 ms
Loss rate: 20.21%
```
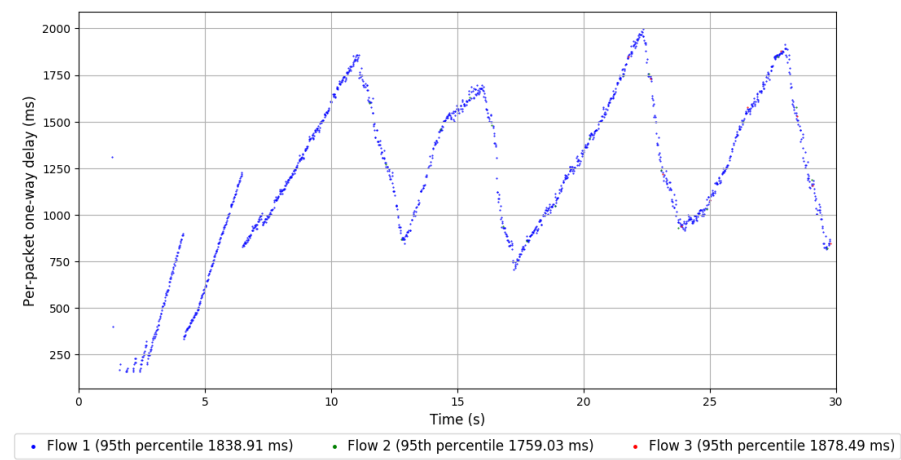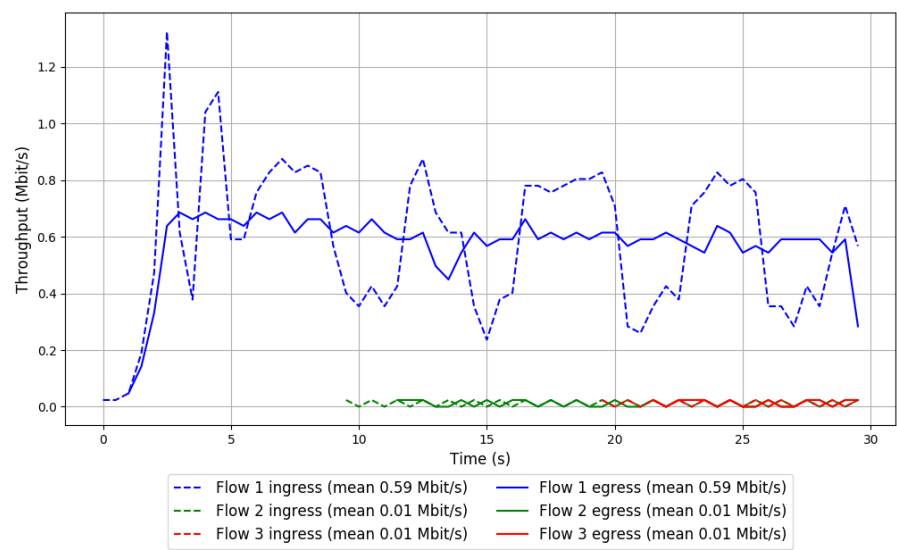
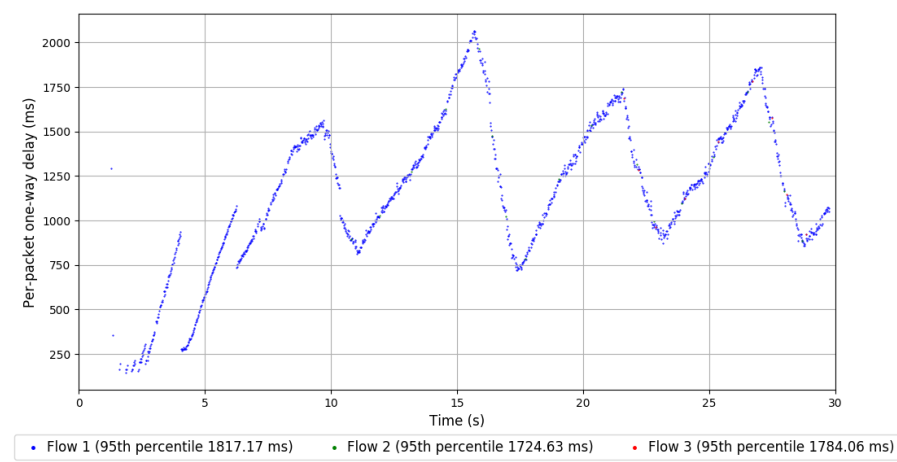Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-04-16 23:47:10
End at: 2018-04-16 23:47:40
Local clock offset: -4.638 ms
Remote clock offset: 6.697 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 2325.862 ms
Loss rate: 8.02%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1824.867 ms
Loss rate: 3.09%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 1885.048 ms
Loss rate: 6.66%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 2564.777 ms
Loss rate: 32.40%
```
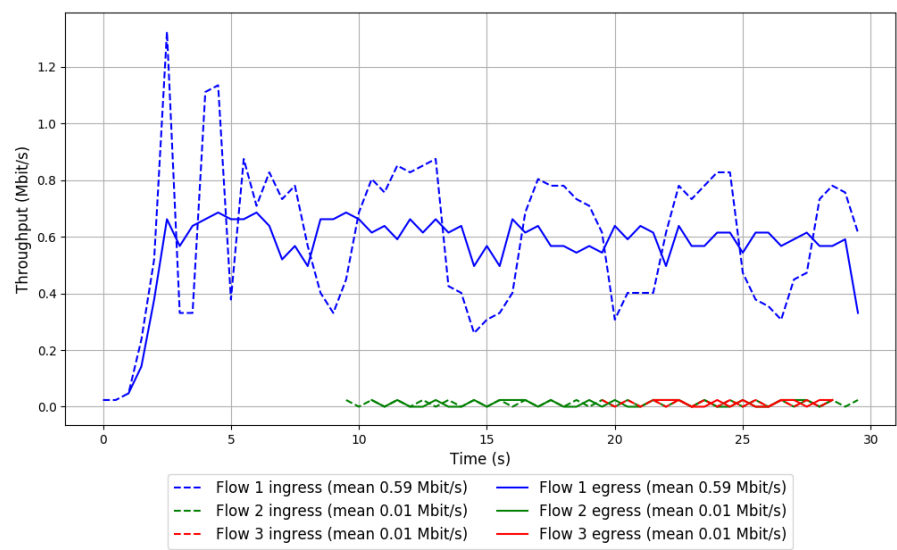
Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-04-16 23:11:51
End at: 2018-04-16 23:12:21
Local clock offset: -4.205 ms
Remote clock offset: 7.102 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1846.432 ms
Loss rate: 4.16%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1838.912 ms
Loss rate: 4.12%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1759.026 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1878.495 ms
Loss rate: 9.09%
```
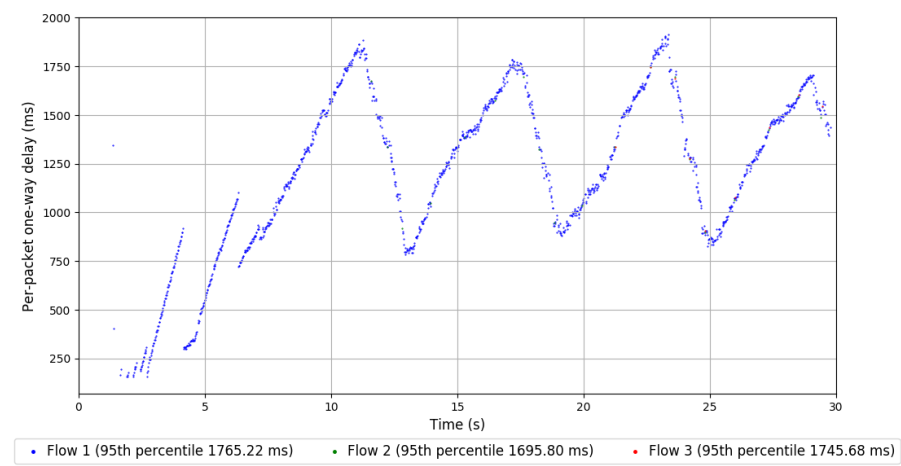
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-04-16 23:33:19
End at: 2018-04-16 23:33:49
Local clock offset: -5.335 ms
Remote clock offset: 12.159 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1817.170 ms
Loss rate: 5.30%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1817.170 ms
Loss rate: 5.21%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1724.626 ms
Loss rate: 9.52%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1784.062 ms
Loss rate: 10.00%
```
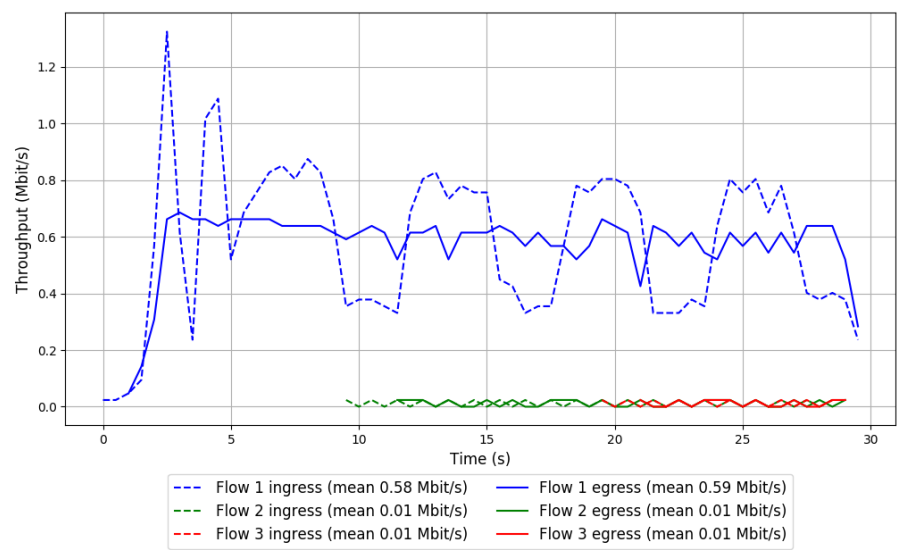
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-04-16 23:54:46
End at: 2018-04-16 23:55:16
Local clock offset: -5.358 ms
Remote clock offset: 5.396 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 1765.216 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1765.216 ms
Loss rate: 3.27%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1695.798 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1745.685 ms
Loss rate: 10.00%
```
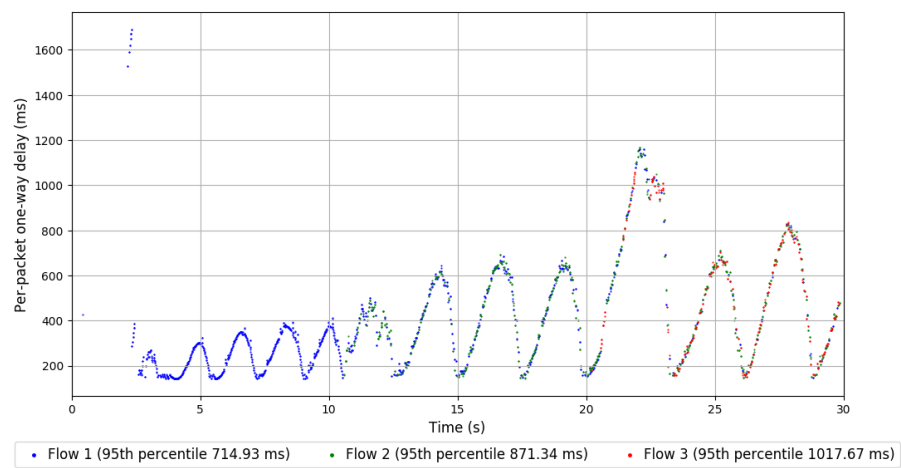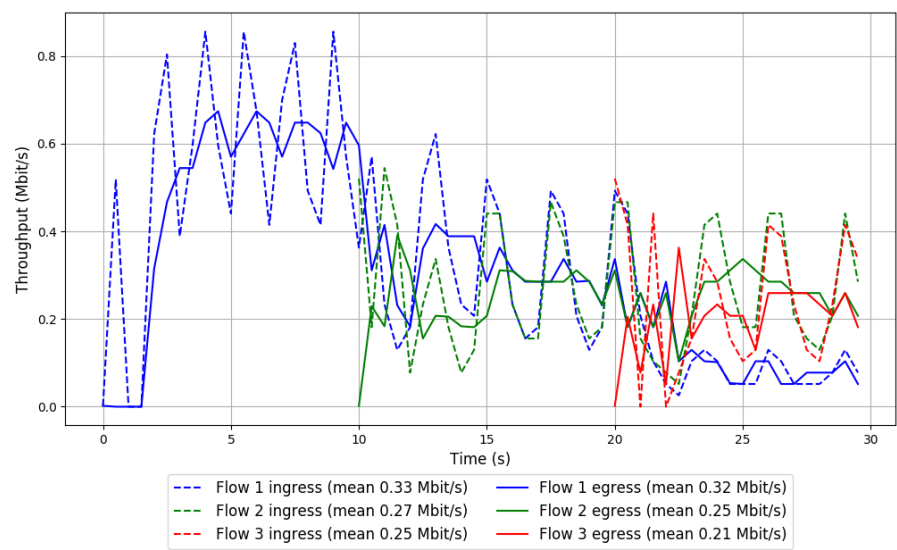
Run 3: Report of Verus — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-04-16 23:09:17
End at: 2018-04-16 23:09:47
Local clock offset: -4.867 ms
Remote clock offset: 6.305 ms

# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 938.074 ms
Loss rate: 8.15%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 714.933 ms
Loss rate: 5.16%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 871.343 ms
Loss rate: 9.05%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1017.674 ms
Loss rate: 18.12%
```
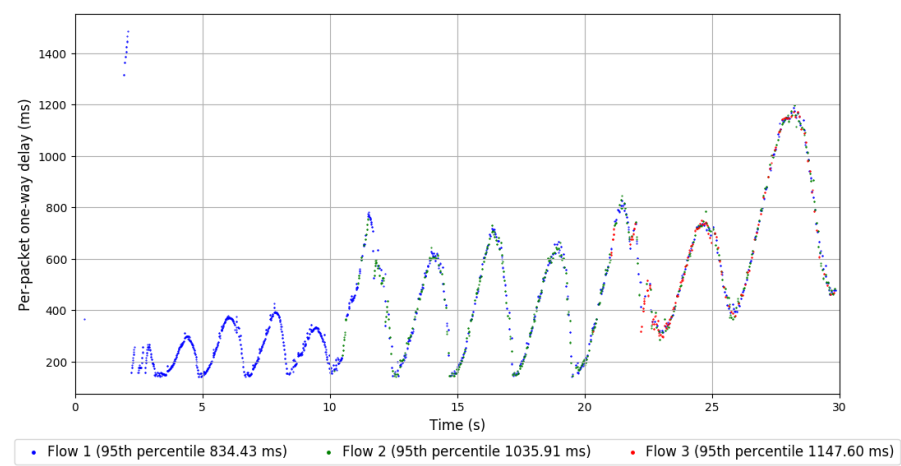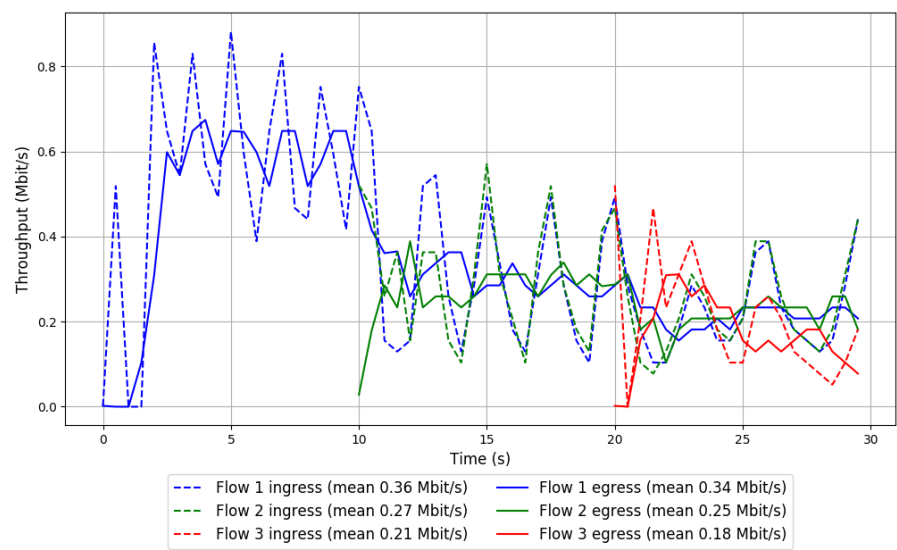
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-04-16 23:30:47
End at: 2018-04-16 23:31:17
Local clock offset: -6.106 ms
Remote clock offset: 7.359 ms


# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 1021.443 ms
Loss rate: 8.75%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 834.433 ms
Loss rate: 6.11%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 1035.912 ms
Loss rate: 10.44%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 1147.603 ms
Loss rate: 18.12%
```

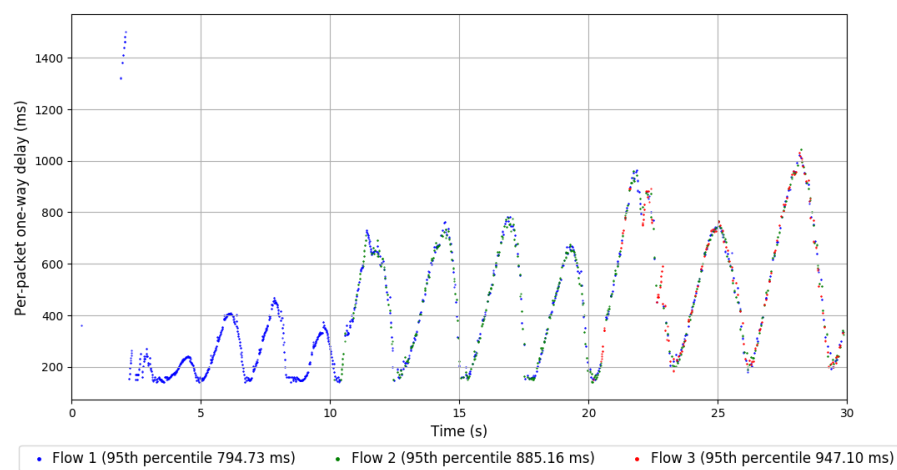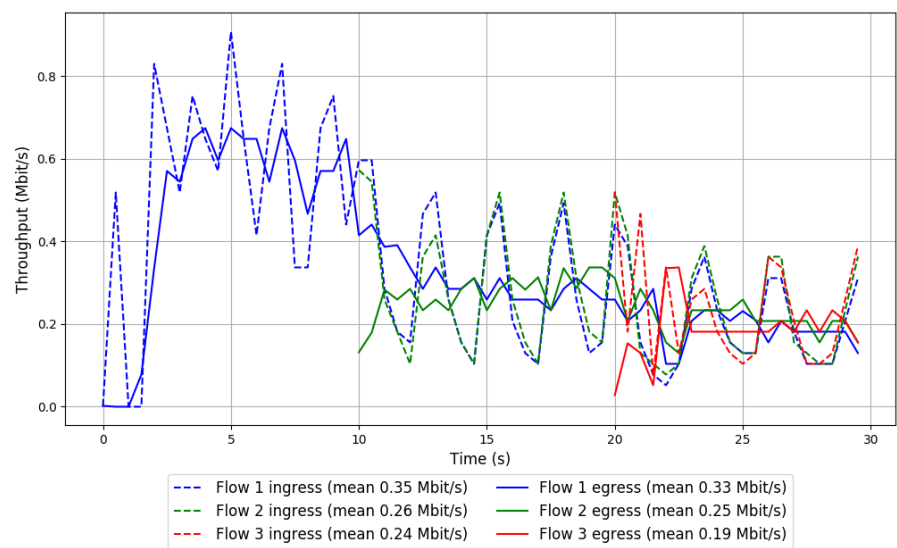## Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-04-16 23:52:14
End at: 2018-04-16 23:52:44
Local clock offset: -5.384 ms
Remote clock offset: 5.64 ms

# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 878.454 ms
Loss rate: 8.18%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 794.725 ms
Loss rate: 5.51%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 885.158 ms
Loss rate: 7.69%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 947.095 ms
Loss rate: 21.07%
```
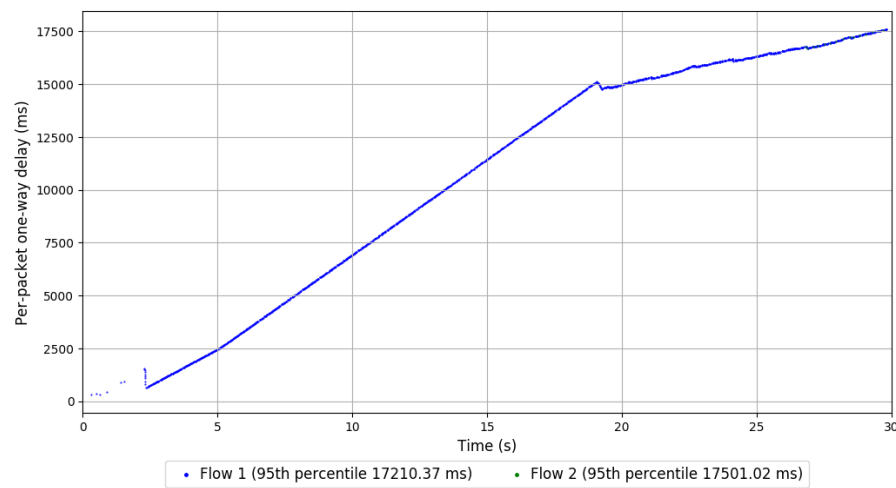
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 0.35 Mbit/s) ---- Flow 1 egress (mean 0.33 Mbit/s) ——
Flow 2 ingress (mean 0.26 Mbit/s) ---- Flow 2 egress (mean 0.25 Mbit/s) ——
Flow 3 ingress (mean 0.24 Mbit/s) ---- Flow 3 egress (mean 0.19 Mbit/s) ——

• Flow 1 (95th percentile 794.73 ms)   • Flow 2 (95th percentile 885.16 ms)   • Flow 3 (95th percentile 947.10 ms)

```
Run 1: Statistics of FillP

Start at: 2018-04-16 23:18:09
End at: 2018-04-16 23:18:40
Local clock offset: -5.925 ms
Remote clock offset: 12.03 ms

# Below is generated by plot.py at 2018-04-17 01:13:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 17229.727 ms
Loss rate: 42.92%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 17210.367 ms
Loss rate: 42.73%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 17501.019 ms
Loss rate: 82.56%
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
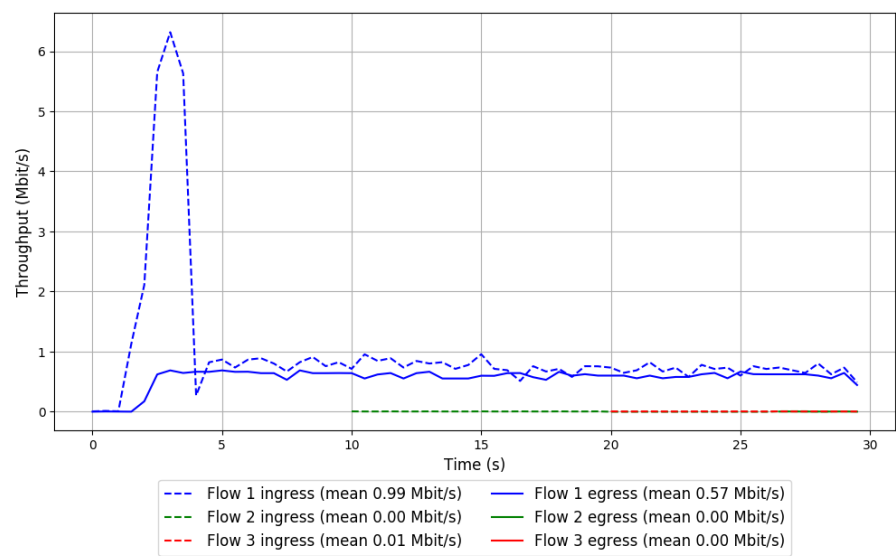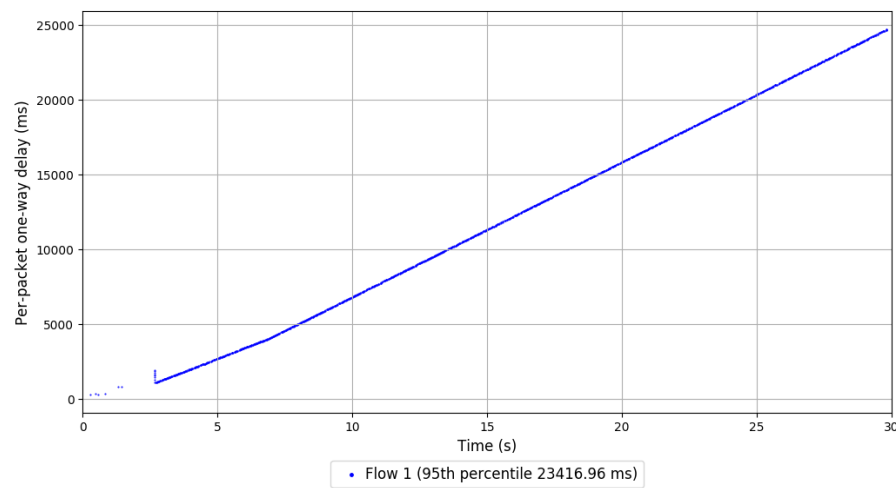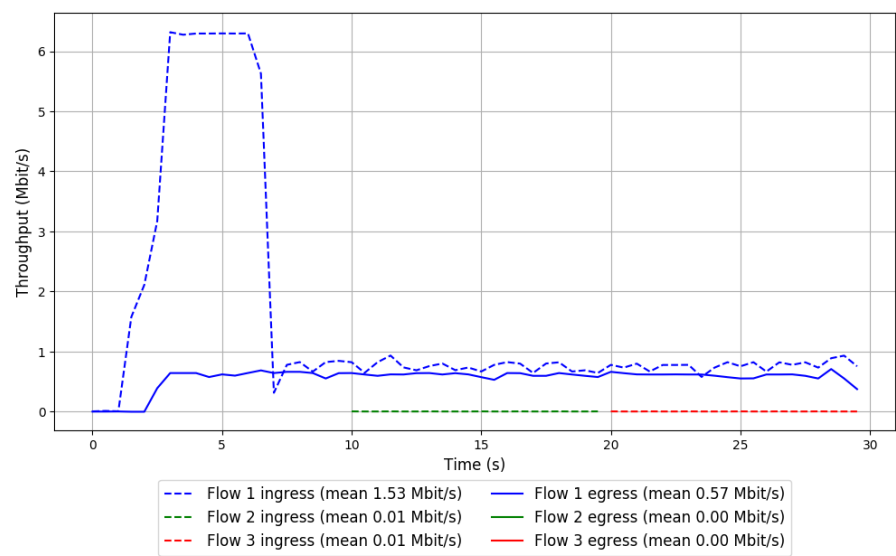
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-04-16 23:39:37
End at: 2018-04-16 23:40:07
Local clock offset: -4.65 ms
Remote clock offset: 6.617 ms


# Below is generated by plot.py at 2018-04-17 01:13:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 23416.963 ms
Loss rate: 63.33%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 23416.963 ms
Loss rate: 63.25%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

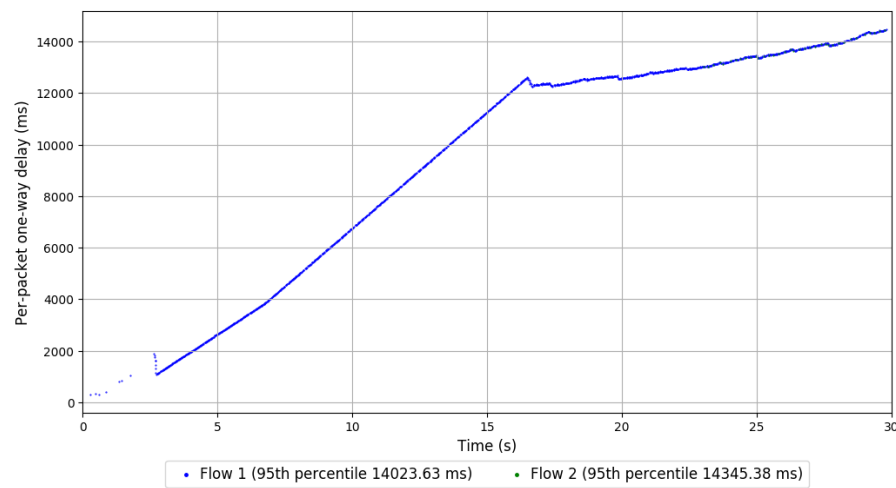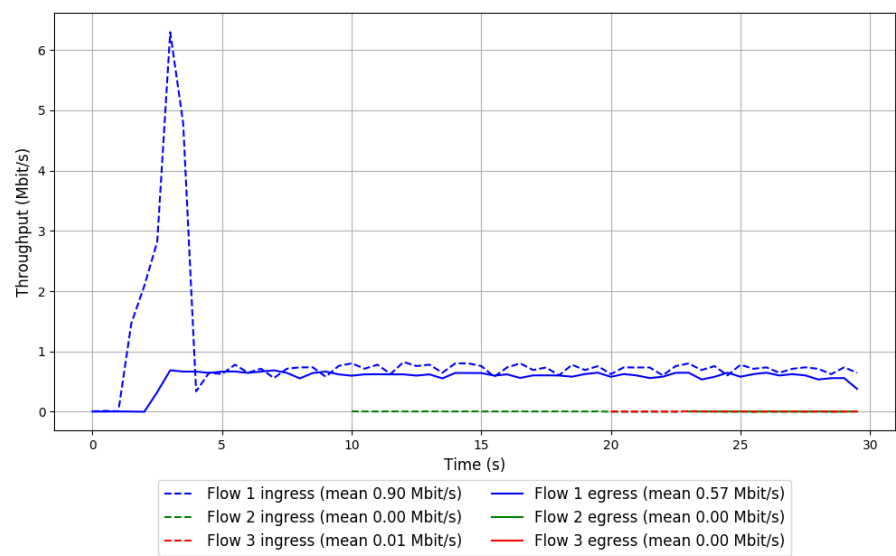Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-04-17 00:01:04
End at: 2018-04-17 00:01:34
Local clock offset: -5.402 ms
Remote clock offset: 10.068 ms


# Below is generated by plot.py at 2018-04-17 01:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 14044.039 ms
Loss rate: 38.42%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 14023.630 ms
Loss rate: 38.24%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 14345.383 ms
Loss rate: 62.30%
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
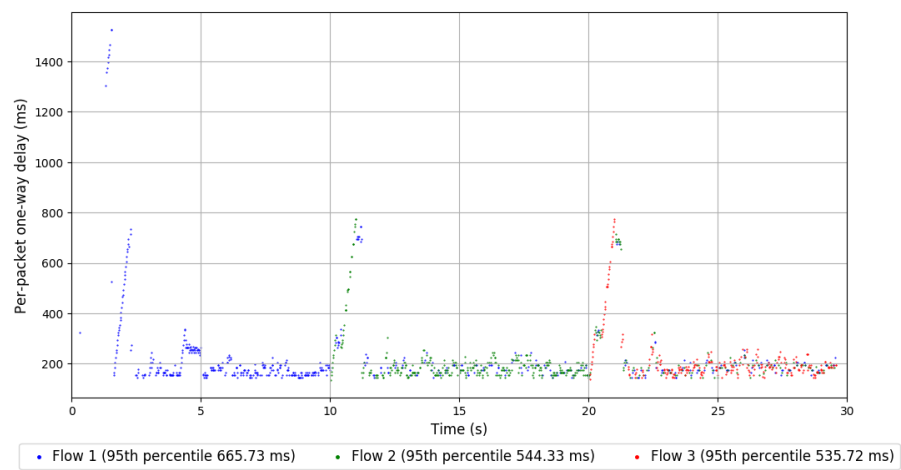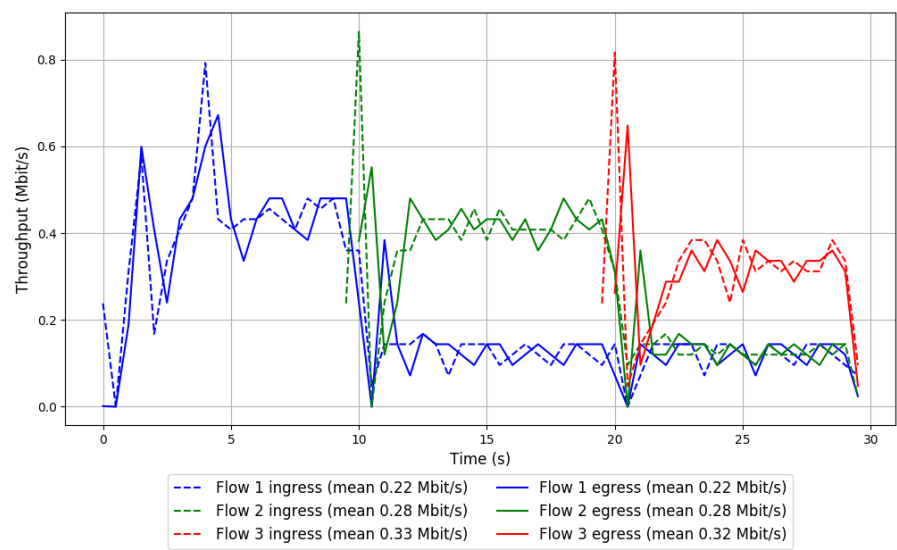
Run 3: Report of FillP — Data Link

```
Run 1: Statistics of Indigo-1-32

Start at: 2018-04-16 23:05:29
End at: 2018-04-16 23:05:59
Local clock offset: -4.829 ms
Remote clock offset: 11.887 ms


# Below is generated by plot.py at 2018-04-17 01:13:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 583.656 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 665.734 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 544.330 ms
Loss rate: 2.17%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 535.720 ms
Loss rate: 5.19%
```

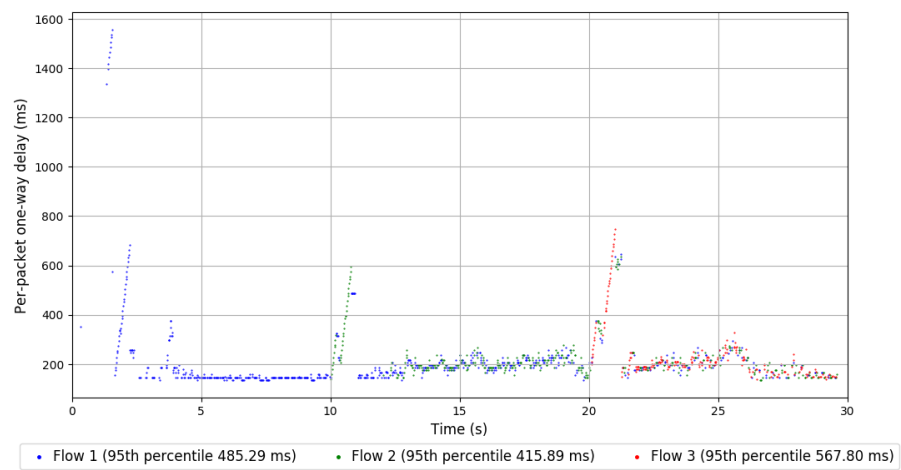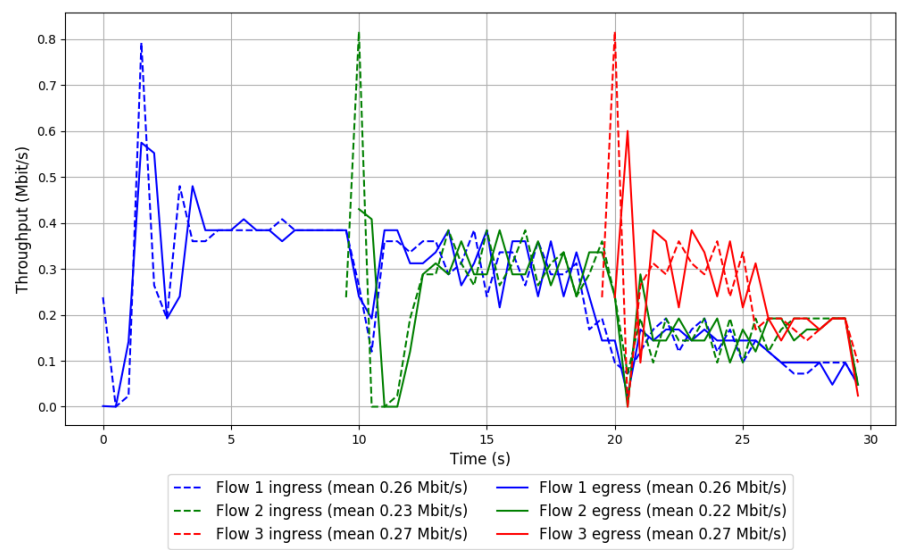Run 1: Report of Indigo-1-32 — Data Link

```
Run 2: Statistics of Indigo-1-32

Start at: 2018-04-16 23:26:59
End at: 2018-04-16 23:27:29
Local clock offset: -4.498 ms
Remote clock offset: 13.016 ms


# Below is generated by plot.py at 2018-04-17 01:13:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 485.389 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 485.290 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 415.889 ms
Loss rate: 3.43%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 567.801 ms
Loss rate: 5.41%
```
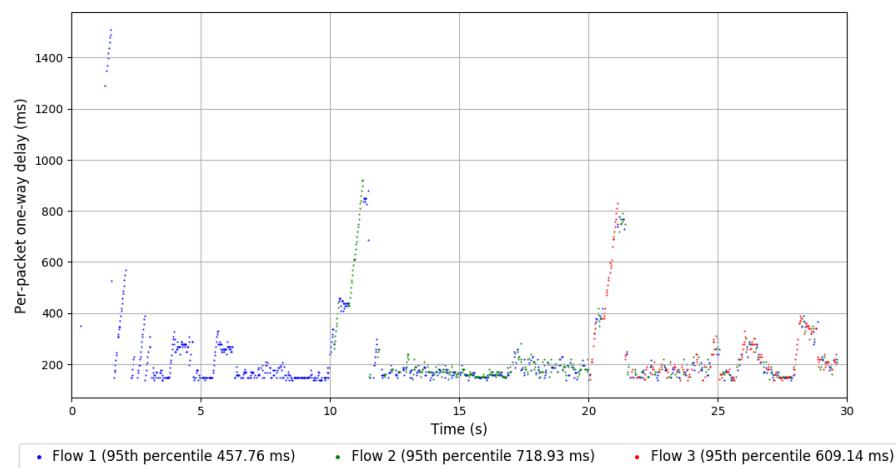
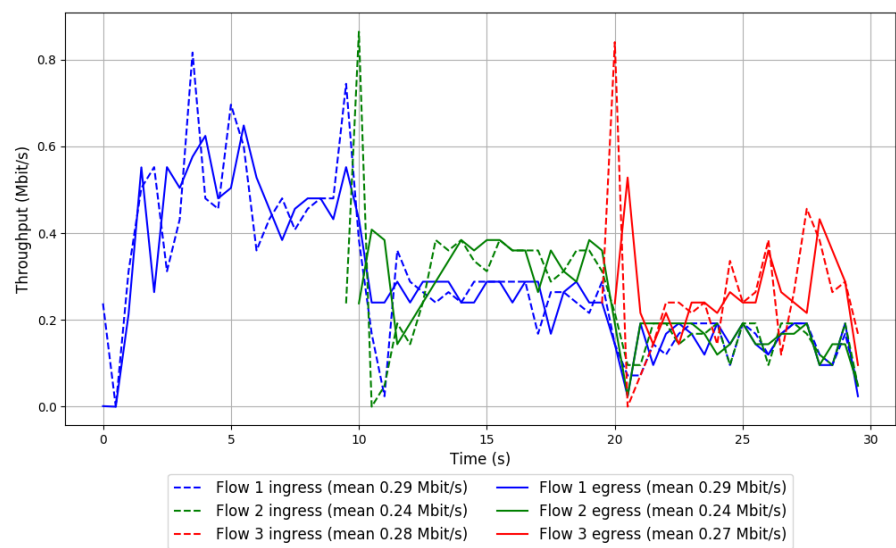Run 2: Report of Indigo-1-32 — Data Link

```
Run 3: Statistics of Indigo-1-32

Start at: 2018-04-16 23:48:26
End at: 2018-04-16 23:48:56
Local clock offset: -6.226 ms
Remote clock offset: 12.375 ms


# Below is generated by plot.py at 2018-04-17 01:13:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 608.541 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 457.761 ms
Loss rate: 1.67%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 718.933 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 609.144 ms
Loss rate: 6.50%
```

Run 3: Report of Indigo-1-32 — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-04-16 23:10:35
End at: 2018-04-16 23:11:05
Local clock offset: -5.683 ms
Remote clock offset: 6.259 ms


# Below is generated by plot.py at 2018-04-17 01:13:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 21067.216 ms
Loss rate: 71.76%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 21067.216 ms
Loss rate: 71.75%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
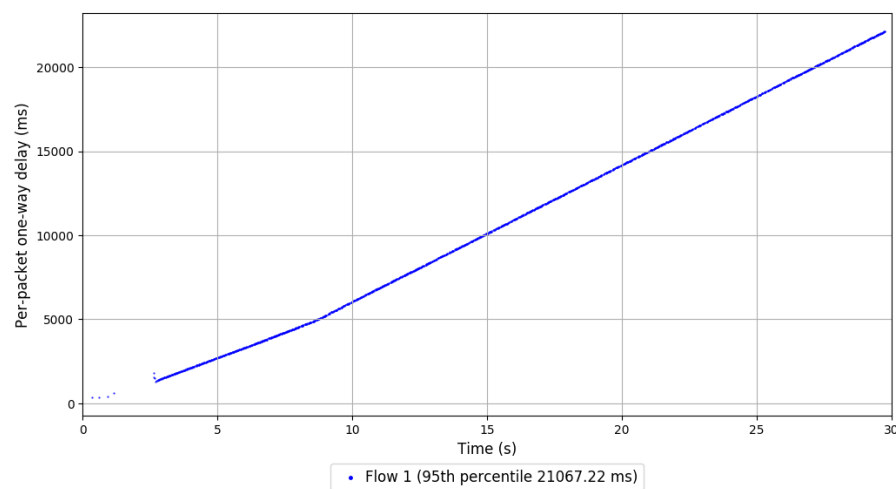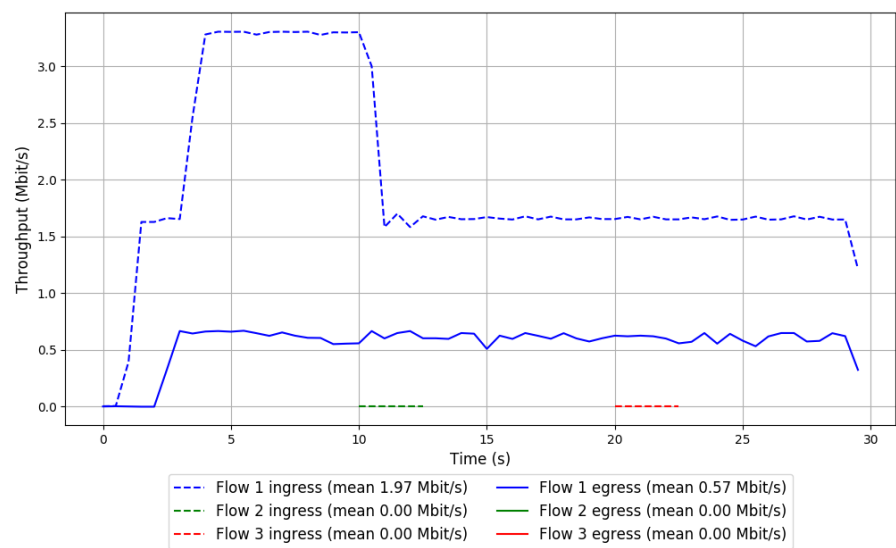
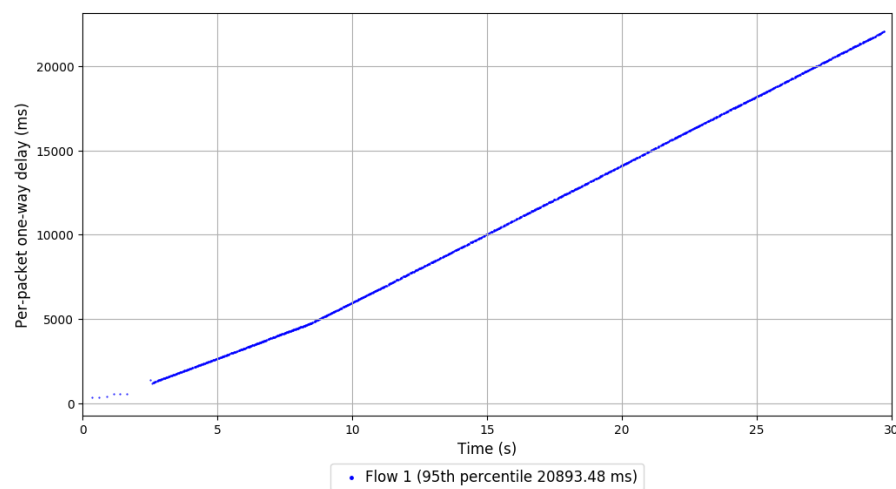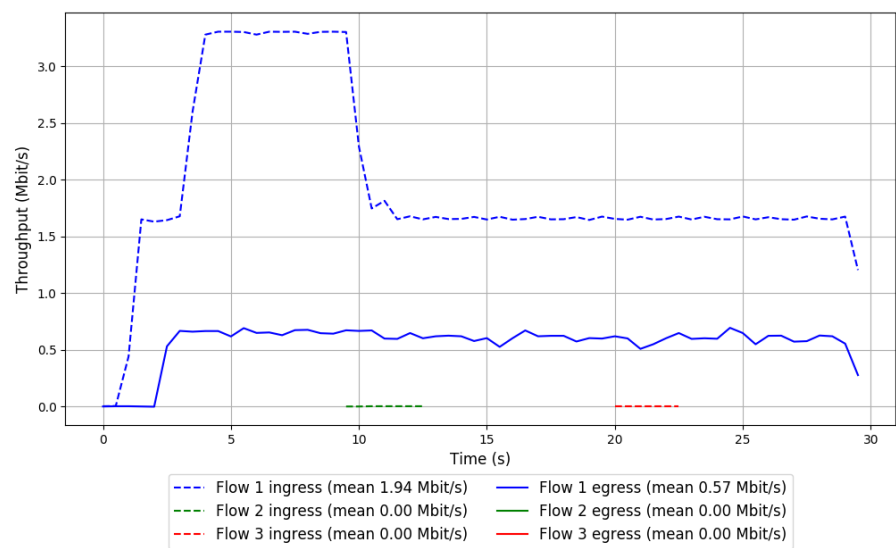Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-04-16 23:32:03
End at: 2018-04-16 23:32:33
Local clock offset: -6.164 ms
Remote clock offset: 13.024 ms


# Below is generated by plot.py at 2018-04-17 01:13:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 20893.481 ms
Loss rate: 70.91%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 20893.481 ms
Loss rate: 70.90%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 1.94 Mbit/s) Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 20893.48 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-04-16 23:53:30
End at: 2018-04-16 23:54:00
Local clock offset: -6.127 ms
Remote clock offset: 5.46 ms


# Below is generated by plot.py at 2018-04-17 01:13:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 21050.728 ms
Loss rate: 71.22%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 21050.728 ms
Loss rate: 71.21%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
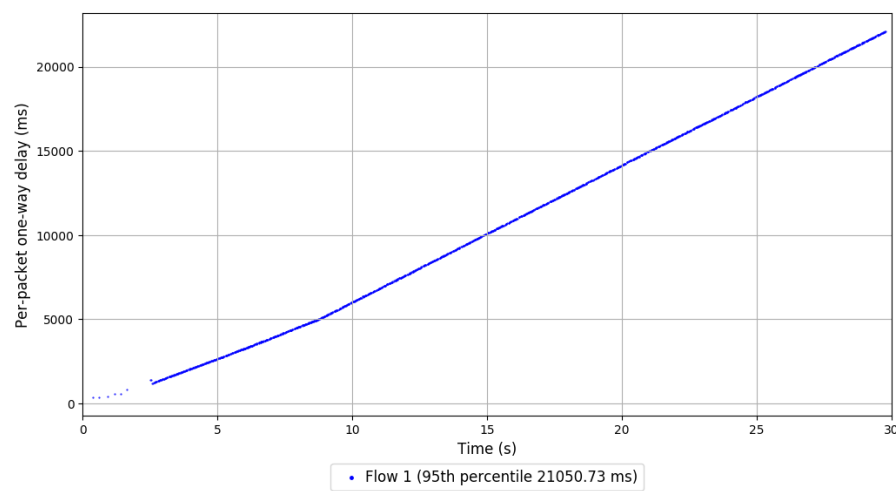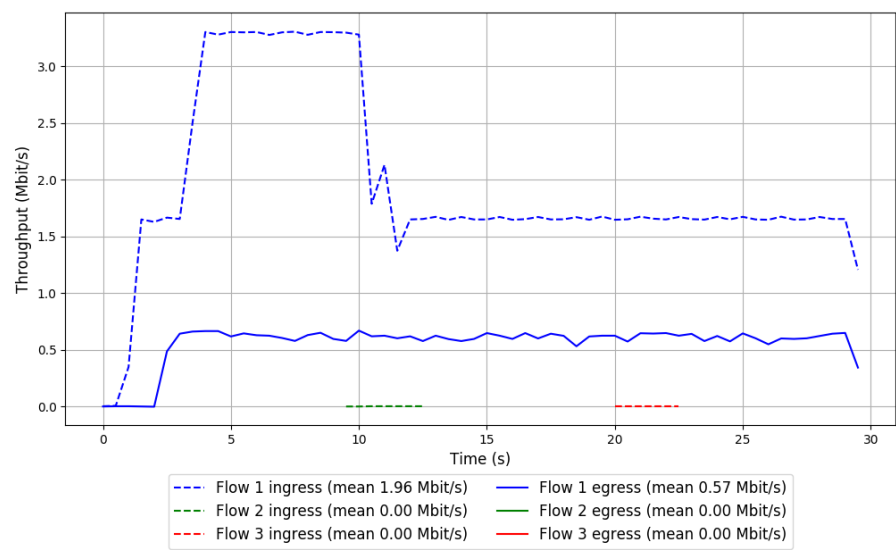
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 1.96 Mbit/s) --- Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) --- Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 21050.73 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-04-16 23:20:42
End at: 2018-04-16 23:21:12
Local clock offset: -5.194 ms
Remote clock offset: 11.23 ms
```

Run 1: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of PCC-Expr

Start at: 2018-04-16 23:42:08
End at: 2018-04-16 23:42:38
Local clock offset: -5.431 ms
Remote clock offset: 12.983 ms
```

Run 2: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 3: Statistics of PCC-Expr

Start at: 2018-04-17 00:03:36
End at: 2018-04-17 00:04:06
Local clock offset: -6.211 ms
Remote clock offset: 5.962 ms
```

Run 3: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing